1. **C# Program to Copy a Section of One Array to Another.**

```
using System;

namespace ArrayCopy
{
    class Program
    {
        static void Main(string[] args)
        {
            int[] src = { 15, 67, 89, 90, 180, 270 };
            int[] dest = new int[3];
            Array.Copy(src, dest, 3);
            Console.Write("Source_Array= ");
            foreach (int e in src)
                Console.Write(e + " ");
            Console.Write("\nDest_Array= ");
            foreach (int e in dest)
                Console.Write(e + " ");
            Console.ReadLine();
        }
    }
}
```

**Output:**

Source_Array= 15 67 89 90 180 270

Dest_Array= 15 67 89

## 2. Write a c# program in console application to illustrate command line arguments.

**i) cmdLineArg.cs**

```
using System;
namespace Lab
{
        class cmdLineArg
        {
                public static void Main(string[] args)
                {
                        Console.WriteLine("cmdLineArg.Length="+args.Length+"\nArgument List:");
                        for(int i=0;i<args.Length;i++)
                                Console.WriteLine(args[i]);
                        Console.ReadLine();
                }
        }
}
```

**Output:**

```
C:\Users\Sanjay-PC\Desktop>csc cmdLineArg.cs
Microsoft (R) Visual C# Compiler version 4.8.3752.0
for C# 5
Copyright (C) Microsoft Corporation. All rights reserved.
This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports
language versions up to C# 5, which is no longer the latest version. For compilers that support
newer versions of the C# programming language, see
http://go.microsoft.com/fwlink/?LinkID=533240

C:\Users\Sanjay-PC\Desktop>cmdLineArg Name phno 54
cmdLineArg.Length=3
Argument List:
Name
phno
54
```

**ii) Fact.cs**

```
using System;
namespace Lab
{
    class Fact
    {
        public static void Main(string[] args)
        {
            int n,fact=1;
            if(int.TryParse(args[0],out n))
            {
                for(int i=1;i<=n;i++)
                    fact=fact*i;
                Console.WriteLine("fact of {0} is {1}",args[0],fact);
                Console.ReadLine();
            }
        }
    }
}
```

**Output:**

**C:\Users\Sanjay-PC\source\repos>csc Fact.cs**

**Microsoft (R) Visual C# Compiler version 4.8.3752.0**

**for C# 5**

**Copyright (C) Microsoft Corporation. All rights reserved.**

**This compiler is provided as part of the Microsoft (R) .NET Framework, but only supports language versions up to C# 5, which is no longer the latest version. For compilers that support newer versions of the C# programming language, see http://go.microsoft.com/fwlink/?LinkID=533240**

**C:\Users\Sanjay-PC\source\repos>Fact 5**

**fact of 5 is 120**

**C:\Users\Sanjay-PC\source\repos>Fact 0**

**fact of 0 is 1**

### 3. C# Program to Convert Infix to Postfix & (Prefix).

```
using System;
using System.Collections.Generic;
using System.Linq;

namespace InfixTo_Prefix_Postfix
{
    class Program
    {
        public static void Main(string[] args)
        {
            Console.Write("Enter Infix Expression: ");
            string exp = Console.ReadLine();
            Console.Write("Postfix_Exp= {0}\nPrefix_exp={1} ", infixToPostfix(exp),
                                                                infixToPrefix(exp));
            Console.ReadLine();
        }

        public static string infixToPostfix(string exp)
        {
            string result = "";
            Stack<char> stack = new Stack<char>();
            for (int i = 0; i < exp.Length; ++i)
            {
                char c = exp[i];
                if (char.IsLetterOrDigit(c))
                    result += c;
                else if (c == '(')
                    stack.Push(c);
                else if (c == ')')
                {
                    while (stack.Count > 0 && stack.Peek() != '(')
                        result += stack.Pop();

                    if (stack.Count > 0 && stack.Peek() != '(')
                        return "Invalid Expression";
                    else
                        stack.Pop();
                }
                else
                {
                    while (stack.Count > 0 && Prec(c) <= Prec(stack.Peek()))
                    {
                        result += stack.Pop();
                    }

                    stack.Push(c);
                }
            }
            while (stack.Count > 0)
                result += stack.Pop();

          //  stack.Clear();
            return result;
        }

        public static string infixToPrefix(string exp)
        {
            string rev_exp="";
            char[] chars = exp.ToCharArray();
            for(int j=chars.Length-1;j>=0;j--)
            {
                if (chars[j] == '(')
                    rev_exp += ')';
                else if (chars[j] == ')')
                    rev_exp += '(';
                else
                    rev_exp += chars[j];
```

```
            }
            var postfix = infixToPostfix(rev_exp);
            var result = new string(postfix.ToCharArray().Reverse().ToArray());
            return result;
        }

        internal static int Prec(char ch)
        {
            switch (ch)
            {
                case '+':
                case '-':
                    return 1;

                case '*':
                case '/':
                    return 2;

                case '^':
                    return 3;
            }
            return -1;
        }
    }
}
```

**Output:**

**Enter Infix Expression: (X+Y)/(N+M)**

**Postfix_Exp= XY+NM+/**

**Prefix_exp=/+XY+NM**

4. **C# program to check whether the entered year is a Leap year or not.**

```
using System;

namespace Leap_Year
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter a Year:");
            int y = int.Parse(Console.ReadLine());
            if ((y % 4 == 0 && y % 100 != 0) || (y % 400 == 0))
                Console.WriteLine("{0} is a Leap Year", y);
            else
                Console.WriteLine("{0} is not a Leap Year", y);
            Console.Read();
        }
    }
}
```

**Output:**

Enter a Year:2015

2015 is not a Leap Year

Enter a Year:2016

2016 is a Leap Year

5. **C# program to reverse a String with Predefined functions.**

```
using System;

namespace Reverse_String
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter a string: ");
            string mystr = Console.ReadLine();
            Console.WriteLine("Reverse_string: {0}", ReverseString(mystr));
            Console.Read();
        }
        public static string ReverseString(string mystr)
        {
            char[] charArray = mystr.ToCharArray();
            Array.Reverse(charArray);
            return new string(charArray);
        }
    }
}
```

**Output:**

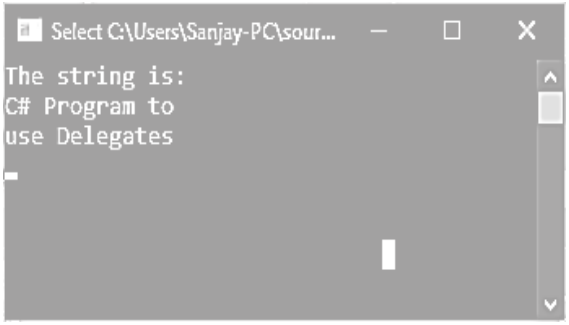
Enter a string: Excuse Me
Reverse_string: eM esucxE

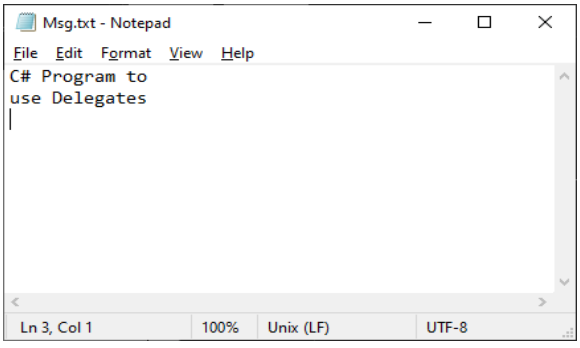
8. **C# Program to Use Delegate to Call 2 Methods within which First method Prints to Console and Second Method Prints to File.**

```
using System;
using System.IO;

namespace DelegateFile
{
    class Program
    {
        static FileStream fs;
        static StreamWriter sw;
        public delegate void printString(string s);
        public static void screen(string str)
        {
            Console.WriteLine("The string is:\n{0}", str);
        }
        public static void File(string s)
        {
            fs = new FileStream("C:\\Users\\Sanjay-PC\\source\\repos\\Sanjay_C#_Lab
            \\Delegate File\\Delegate File\\Msg.txt", FileMode.Append, FileAccess.Write);
            sw = new StreamWriter(fs);
            sw.WriteLine(s);
            sw.Flush();
            sw.Close();
            fs.Close();
        }
        public static void sendString(printString ps)
        {
            ps("C# Program to \nuse Delegates");
        }
        static void Main(string[] args)
        {
            printString ps1 = new printString(screen);
            printString ps2 = new printString(File);
            sendString(ps1);
            sendString(ps2);
            Console.Read();
        }
    }
}
```

**Output:**

The string is:
C# Program to
use Delegates



9. **C# program to process the results of a particular course you are familiar with using interfaces and properties.**

```
using System;

namespace Result_Process
{
    class Program
    {
        class Result
        {
            string course_name="N.A";
            int no_of_papers=0,marks=0;
            //Property
            public string Course_Name{ get; set; }
            public int No_Of_Papers{ get; set; }
            public int Marks{ get; set; }
        }
        static void Main(string[] args)
        {
            int avg=0;
            Result r = new Result();
            Console.Write("Result Page(Enter student details)\nCourse Name:");
            r.Course_Name = Console.ReadLine();
            Console.Write("No.of Papers:");
            r.No_Of_Papers = int.Parse(Console.ReadLine());
            for(int i=1;i<=r.No_Of_Papers;i++)
            {
                Result p=new Result();
                Console.Write("Paper"+i+" Marks=");
                p.Marks = int.Parse(Console.ReadLine());
                avg+= p.Marks;
            }
            Console.WriteLine("\nResult: " + (avg) / r.No_Of_Papers + "% in " +
                    r.Course_Name);
            Console.Read();
        }
    }
}
```

**Output:**

**Result Page(Enter student details)**
**Course Name:Msc Cs**
**No.of Papers:4**
**Paper1 Marks=77**
**Paper2 Marks=88**
**Paper3 Marks=66**
**Paper4 Marks=98**

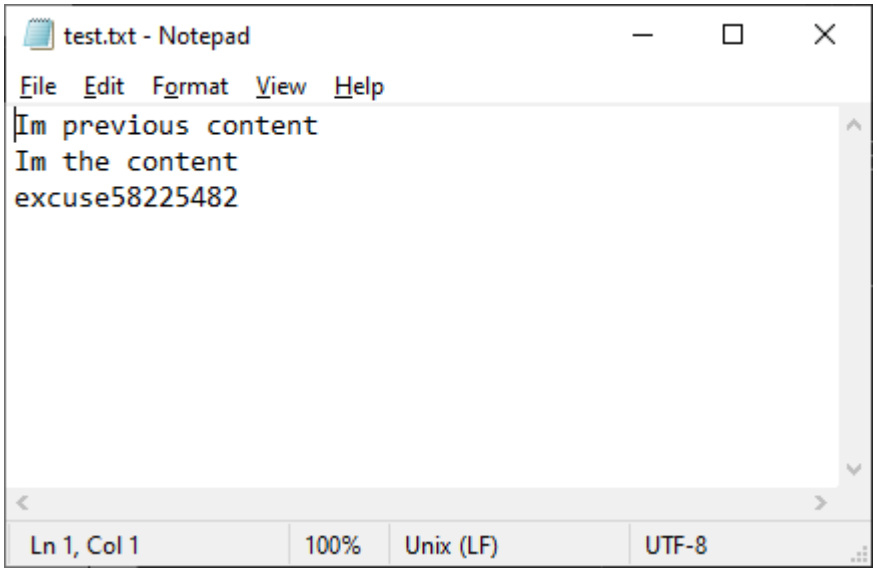
**Result: 82% in Msc Cs**

## 10. C# Program to Illustrate Methods of FileInfo Class.

```
using System;
using System.IO;

namespace FileInfo_Methods
{
    class Program
    {
        static void Main(string[] args)
        {
            //creates reference to a file
            FileInfo fi=new FileInfo("test.txt");

            FileStream fs = fi.Open(FileMode.OpenOrCreate, FileAccess.ReadWrite,
            FileShare.ReadWrite);
            StreamReader sr = new StreamReader(fs);
            StreamWriter sw = new StreamWriter(fs);
            Console.Write("\nContent: " + sr.ReadToEnd());
            sw.Write("\nIm the content\nexcuse"+ fi.GetHashCode());

            fi.Encrypt();
            Console.Write("\nContent: " + sr.ReadToEnd());//doesn't prints content

            sw.Close();
            sr.Close();
            fs.Close();

            Console.WriteLine("\nProperties:\nDirectoryName : " + fi.DirectoryName +
                        "\nFullName: " + fi.FullName +
                        "\nExtension: " + fi.Extension+
                        "\nSize(Length):"+fi.Length+
                        "\nName:"+fi.Name+
                        "\nIsReadOnly:"+fi.IsReadOnly+
                        "\nLastWriteTime:"+fi.LastWriteTime+
                        "\nLastAccessTime: "+fi.LastAccessTime+
                        "\nExists: "+ fi.Exists);

            Console.Read();
        }
    }
}
```

**Output:**

Content: Im previous content
Content:
Properties:
DirectoryName:C:\Users\SanjayPC\source\repos\Sanjay_C#_Lab\FileInfo_Methods\FileInfo_Methods\bin\Debug\netcoreapp3.1
FullName:C:\Users\SanjayPC\source\repos\Sanjay_C#_Lab\FileInfo_Methods\FileInfo_Methods\bin\Debug\netcoreapp3.1\test.txt
Extension: .txt
Size(Length):49
Name:test.txt
IsReadOnly:False
LastWriteTime:01-04-2021 23:13:33
LastAccessTime: 01-04-2021 23:13:33
Exists: True



## 11. C# Program to Illustrate Pascal Triangle

```
using System;

namespace Pascal
{
    class Program
    {
        static void Main(string[] args)
        {
            int val = 1, blank, i, j;
            Console.Write("Enter no.of rows: ");
            int rows = int.Parse(Console.ReadLine());
            Console.WriteLine("Pascal Triangle");
            for (i = 0; i < rows; i++)
            {
                for (blank = 1; blank <= rows - i; blank++)
                    Console.Write(" ");
                for (j = 0; j <= i; j++)
                {
                    if (j == 0 || i == 0)
                        val = 1;
                    else
                        val = val * (i - j + 1) / j;
                    Console.Write(val + " ");
                }
                Console.WriteLine();
            }
            Console.Read();
        }
    }
}
```

**Output:**

Enter no.of rows: 5
Pascal Triangle
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

## 12. C# Program to Calculate the Series sin(x)=x-x^3/3!+x^5/5!-x^7/7!+……

```
using System;

namespace sinx
{
	public class Program
	{
		public static void Main()
		{
			Console.Write("Enter Angle(in degree)= ");
			int x = int.Parse(Console.ReadLine()), sign = 1, n = 1;
			decimal res = 0;
			double rad = x * (Math.PI / 180.0);  //convert  Degree To Radian

			for (long po = 1; n <= 10; po += 2)
			{
				res += (decimal)(sign * (Math.Pow(rad, po)) / fact(po));
				n += 1;
				sign *= -1;
			}

			Console.Write("sin({0})= {1}", x, res);
			Console.Read();
		}
		static long fact(long p)
		{
			if (p >= 1)
				return (p * fact(p - 1));

			return 1;
		}
	}
}
```

**Output:**

```
Enter Angle(in degree)= 90
sin(90)= 1.0000000000000033316944870526

Enter Angle(in degree)= 120
sin(120)= 0.866025403784338868194663 8

Enter Angle(in degree)= 180
sin(180)= -0.000000000528927217918 9
```

## 13. C# Program to Display Upper Triangular and Lower Triangular Matrix.

```
using System;

namespace Upper_Lower
{
	public class Program
	{
		static void Upper(int[,] Matrix, int rows, int cols)
		{
			Console.WriteLine("\nUpper Triangular Matrix=");
			for (int i = 0; i < rows; i++)
			{
				for (int j = 0; j < cols; j++)
				{
					if (i > j)
						Console.Write("0 ");
					else
						Console.Write(Matrix[i, j] + " ");
				}
				Console.WriteLine();
			}
		}
		static void Lower(int[,] Matrix, int rows, int cols)
		{
			Console.WriteLine("\nLower Triangular Matrix = ");
			for (int i = 0; i < rows; i++)
			{
				for (int j = 0; j < cols; j++)
				{
					if (i < j)
						Console.Write("0 ");
					else
						Console.Write(Matrix[i, j] + " ");
				}
				Console.WriteLine();
			}
		}
		public static void Main()
		{
			Console.Write("Rows= ");
			int rows = int.Parse(Console.ReadLine());
			Console.Write("Cols= ");
			int cols = int.Parse(Console.ReadLine());
			int[,] Matrix = new int[rows, cols];
			for (int i = 0; i < rows; i++)
			{
				for (int j = 0; j < cols; j++)
				{
					Console.Write("Matrix[{0}][{1}]=", i, j);
					Matrix[i, j] = int.Parse(Console.ReadLine());
				}
			}
			Console.WriteLine("Matrix:");
			for (int i = 0; i < rows; i++)
			{
				for (int j = 0; j < cols; j++)
				{
					Console.Write(Matrix[i, j] + " ");
				}
				Console.WriteLine();
			}
			Upper(Matrix, rows, cols);
			Lower(Matrix, rows, cols);
			Console.Read();
		}
	}
}
```

**/Output:**

```
Rows= 3
Cols= 3
Matrix[0][0]=5
Matrix[0][1]=6
Matrix[0][2]=7
Matrix[1][0]=3
Matrix[1][1]=2
Matrix[1][2]=7
Matrix[2][0]=8
Matrix[2][1]=9
Matrix[2][2]=7
Matrix:
5 6 7
3 2 7
8 9 7

Upper Triangular Matrix=
5 6 7
0 2 7
0 0 7

Lower Triangular Matrix =
5 0 0
3 2 0
8 9 7
```

## 14. C# Program to Display the IP Address of the Machine.

```
using System;
using System.Net;
namespace IPAddress
{
    class Program
    {
        static void Main(string[] args)
        {
            var host = Dns.GetHostName();
            Console.WriteLine("Host: "+host);
            foreach (var ip in Dns.GetHostEntry(host).AddressList)
                    Console.WriteLine(ip.AddressFamily+" : "+ip);
            Console.Read();
        }
    }
}
```

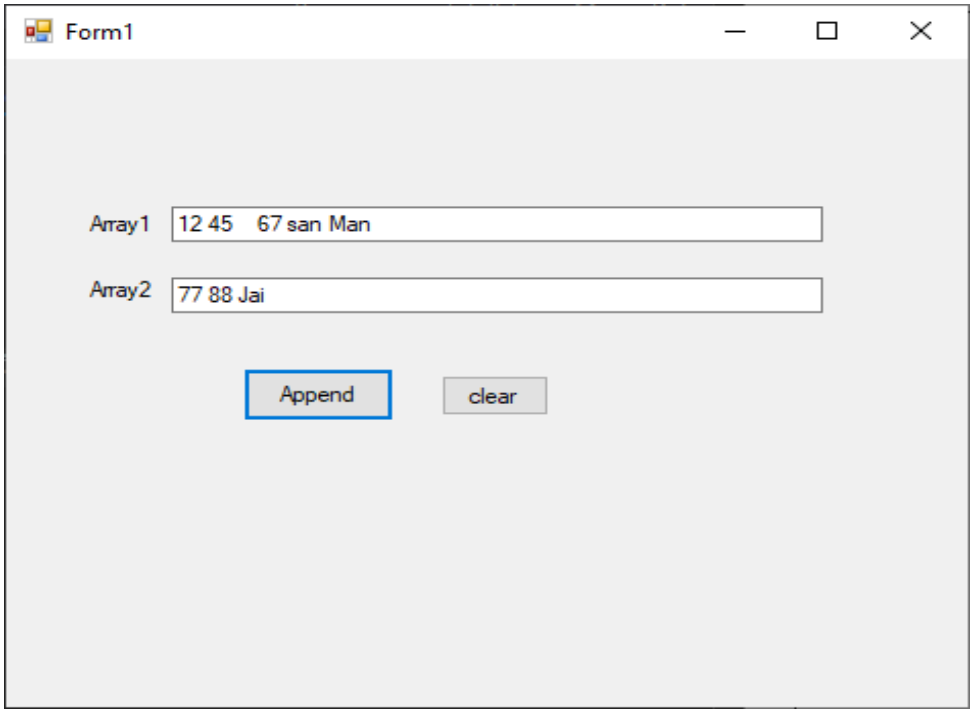
**Output:**

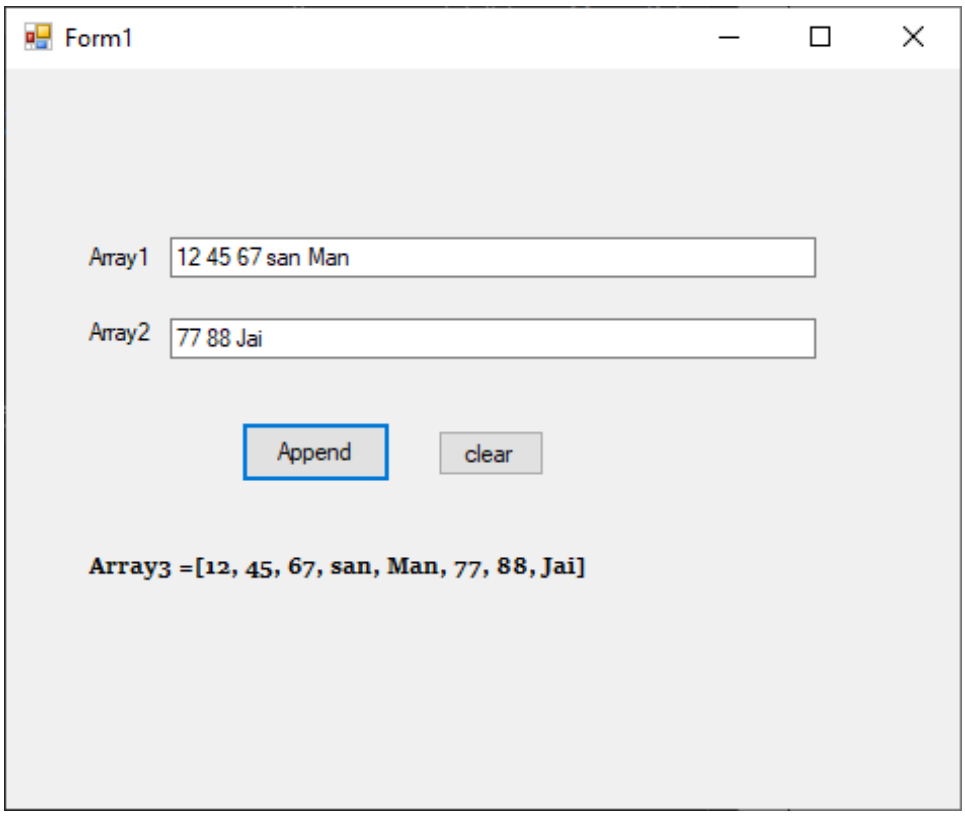
Host: DESKTOP-LEUH97F
InterNetworkV6 : fe80::f1bf:9701:1fb9:f380%24
InterNetworkV6 : 2405:204:5789:b456:4969:83e1:2987:cdbd
InterNetworkV6 : 2405:204:5789:b456:f1bf:9701:1fb9:f380\
InterNetwork : 192.168.43.36

## Windows Application

### 15. Program to Get 2 Arrays as Input and Produce a 3rd Array by appending one to other.

```
using System;
using System.Linq;
using System.Text.RegularExpressions;
using System.Windows.Forms;

namespace Array_Append_Easy
{
    public partial class Form1 : Form
    {
        string[] arr1, arr2, arr3;
        public Form1()
        {
            InitializeComponent();
            Array3.Visible = false;
        }

        private void Append_Btn_Click(object sender, EventArgs e)
        {
            if (Array1.Text != "" && Array2.Text != "")
            {
                Array1.Text = Regex.Replace(Array1.Text.Trim(), " +", " ");
                Array2.Text = Regex.Replace(Array2.Text.Trim(), " +", " ");
                arr1 = Array1.Text.Split(' ');
                arr2 = Array2.Text.Split(' ');
                arr3 = arr1.Concat(arr2).ToArray();
                Array3.Text = "Array3 =[" + string.Join(", ", arr3) + "]";
                Array3.Visible = true;
            }
            else
            {
                MessageBox.Show("Please Enter Elements", "Array_Append_GUI",
                   MessageBoxButtons.OK);
            }
        }
        private void clear_Click(object sender, EventArgs e)
        {
            Array3.Visible = false;
            Array1.Clear();
            Array2.Clear();
        }
    }
}
```


Form1
Array1
12 45 67 san Man
Array2
77 88 Jai
Append
clear

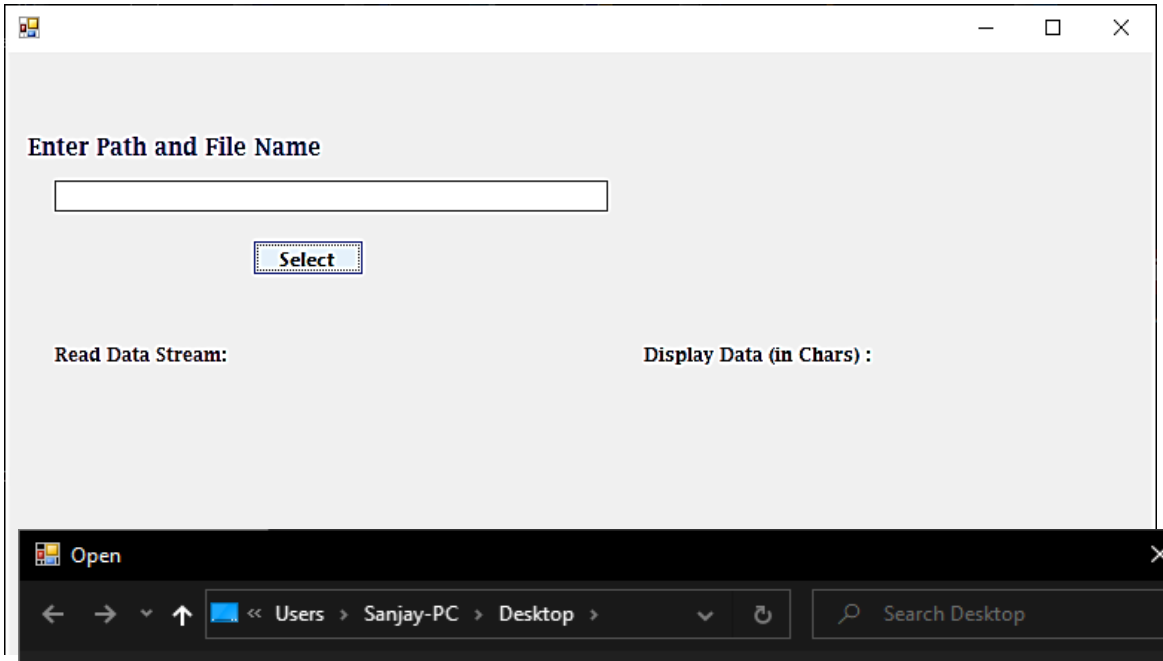

Form1
Array1
12 45 67 san Man
Array2
77 88 Jai
Append
clear
Array3 =[12, 45, 67, san, Man, 77, 88, Jai]

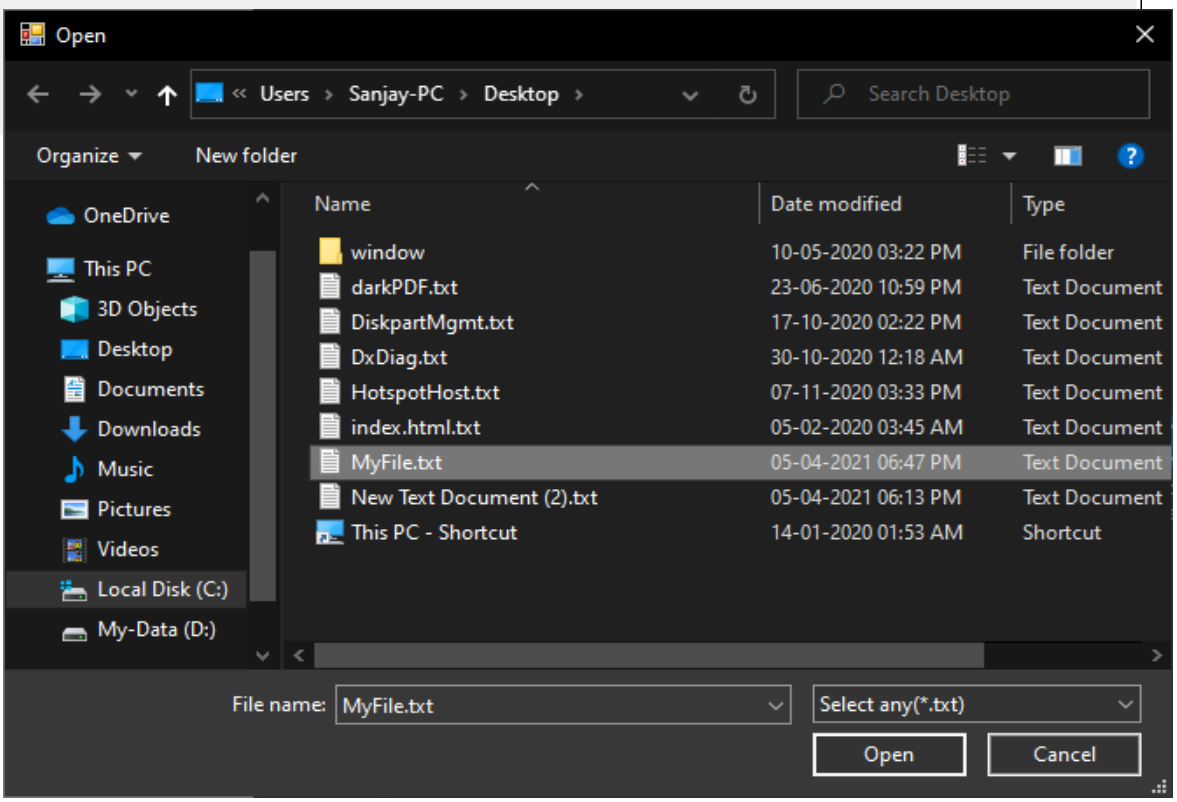
**16. Program to Produce a Filtered Sequence of Elements that Contain only One Property of Each Student.**

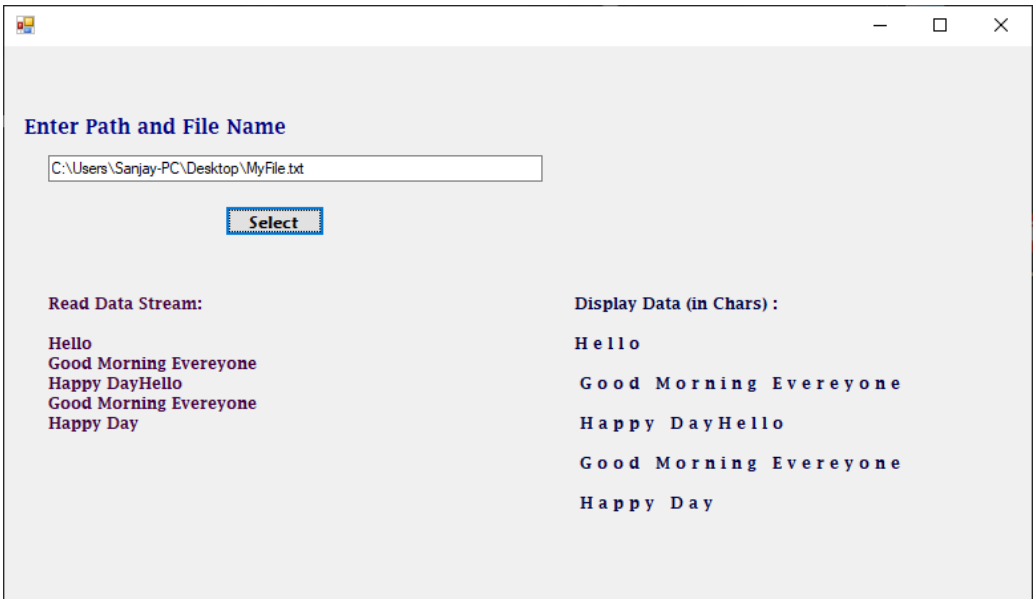
## 17. Program to Read Data from Stream and Cast Data to Chars.

```
using System;
using System.IO;
using System.Windows.Forms;

namespace StreamToCharFormApp
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Select_Click(object sender, EventArgs e)
        {
            OpenFileDialog File_Selector_Dialog = new OpenFileDialog();
            File_Selector_Dialog.InitialDirectory = "C:\\Users\\Sanjay-PC\\Desktop\\";
            File_Selector_Dialog.Filter = "Access files(*.txt)|*.txt";
            DialogResult result = File_Selector_Dialog.ShowDialog();
            string path = File_Selector_Dialog.FileName;
            File_stream.Text = path;
            if (path != "")
            {
                string text = File.ReadAllText(path);//Reading Data Stream
                ReadData_lb.Text += text;
                using (Stream s = new FileStream(path, FileMode.Open))
                {
                    int read;
                    while ((read = s.ReadByte()) != -1)
                    {
                        Display_lb.Text += (char)read + " ";//Casting in Char Data Type
                    }
                }
            }
        }
    }
}
```

**Output:**


Enter Path and File Name
Select
Read Data Stream:
Display Data (in Chars) :


Open
Users › Sanjay-PC › Desktop ›
Search Desktop
Organize
New folder
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
My-Data (D:)
Name
Date modified
Type
window 10-05-2020 03:22 PM File folder
darkPDF.txt 23-06-2020 10:59 PM Text Document
DiskpartMgmt.txt 17-10-2020 02:22 PM Text Document
DxDiag.txt 30-10-2020 12:18 AM Text Document
HotspotHost.txt 07-11-2020 03:33 PM Text Document
index.html.txt 05-02-2020 03:45 AM Text Document
MyFile.txt 05-04-2021 06:47 PM Text Document
New Text Document (2).txt 05-04-2021 06:13 PM Text Document
This PC - Shortcut 14-01-2020 01:53 AM Shortcut
File name: MyFile.txt
Select any(*.txt)
Open
Cancel


Enter Path and File Name
C:\Users\Sanjay-PC\Desktop\MyFile.txt
Select
Read Data Stream:
Hello
Good Morning Evereyone
Happy DayHello
Good Morning Evereyone
Happy Day
Display Data (in Chars) :
Hello
Good Morning Evereyone
Happy DayHello
Good Morning Evereyone
Happy Day

**ii)cmd**

```
using System;
using System.IO;

namespace StreamToCharApp
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter full path of file(.txt): ");
            string path = Console.ReadLine();
            if (File.Exists(path))
            {
                Console.Write("Content(stream):\n"+File.ReadAllText(path));

                Console.WriteLine("\n(in chars):");
                using (Stream s = new FileStream(path, FileMode.Open))
                {
                    int read;
                    while((read=s.ReadByte())!=-1)
                    {
                        Console.Write(" {0}", (char)read);
                    }
                }
            }
            else
                Console.WriteLine("File Not Exists");
            Console.Read();
        }
    }
}
```

**Output:**

**Enter full path of file(.txt): C:\Users\Sanjay-PC\Desktop\myfile.txt**

**Content(stream):**

**Hello**

**Good Morning Everyone**

**Happy Day**

**(in chars):**

**H e l l o**

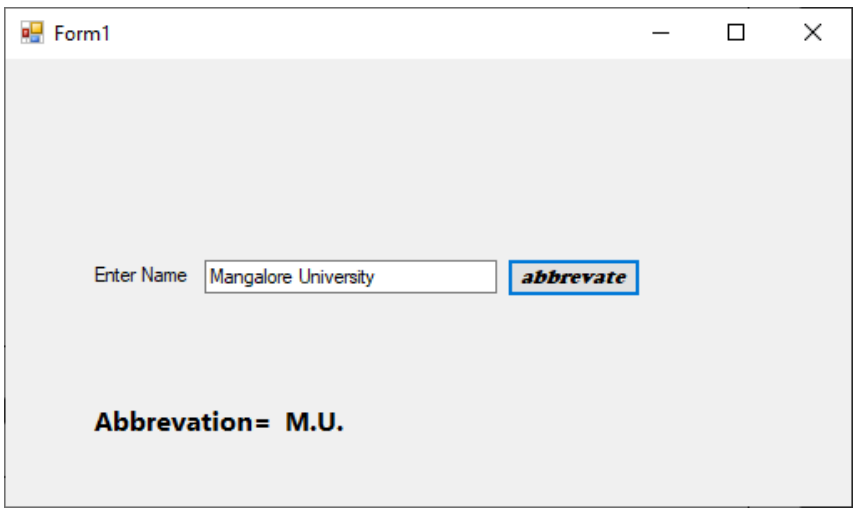
**G o o d  M o r n i n g  E v e r y o n e**

**H a p p y  D a y**

## 18. Program to Display the Abbreviation of a Text.

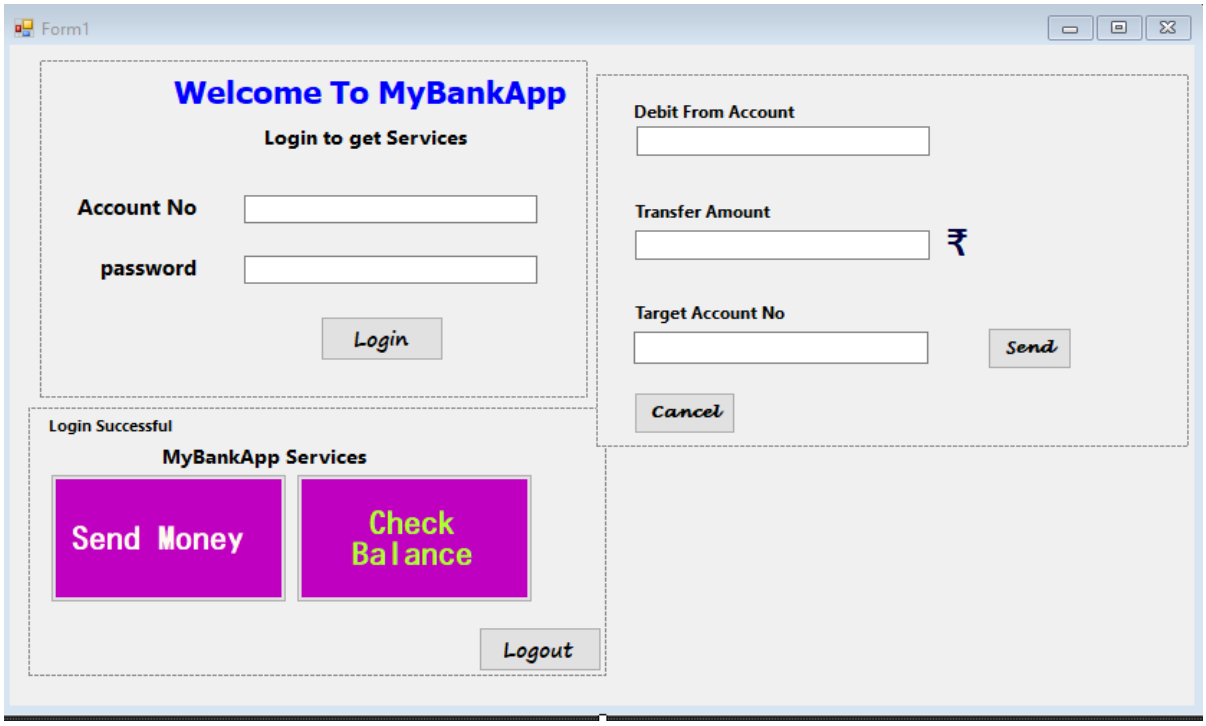
```
using System;
using System.Windows.Forms;

namespace Abbrevation_Form
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void abbrevate_Click(object sender, EventArgs e)
        {
            int j = 0;
            string str = TextBox1.Text;
            str = str.ToUpper();
            char[] result = new char[str.Length];
            result[j++] = str[0];
            result[j++] = '.';

            for (int i = 0; i < str.Length - 1; i++)
            {
                if (str[i] == ' ' && str[i + 1] != ' ')
                {
                    result[j++] = str[i + 1];
                    result[j++] = '.';
                }
            }
            Result.Text = "Abbrevation=  " + new string(result);
            Result.Visible = true;
        }

        private void TextBox1_KeyUp(object sender, KeyEventArgs ke)
        {
            Console.WriteLine(ke.ToString());
           if(ke.KeyValue==13)
            {
                abbrevate_Click(sender, ke);
            }
        }
    }
}
```

**Output:**



## 19. Program to Demonstrate Transactions using Interface.

**Design Window:**




**Code:**

```
using System;
using System.Data.SqlClient;
using System.Windows.Forms;


namespace Bank_Transaction
{
    public partial class Form1 : Form
    {
        static string con_str = "Data
              Source=(LocalDB)\\MSSQLLocalDB;AttachDbFilename=C:\\Users\\Sanjay-
              PC\\source\\repos\\Sanjay_C#_Lab\\Bank Transaction\\Bank
              Transaction\\LocalBankDB.mdf;Integrated Security=True";
        SqlConnection conn=new SqlConnection(con_str);
        SqlCommand cmd;
        string sql, login_acc_no="";
        float Bal = 0;

        public Form1()
        {
            InitializeComponent();
            Home_Panel.Visible = false;
            Transaction_Panel.Visible = false;
            conn.Open();
        }

        private void Login_Btn_Click(object sender, EventArgs e)
        {
            SqlDataReader dreader1;
            if (acc_no.Text != "" && pswd.Text != "")
            {
                sql = "Select * from dbo.LocalBank where (Acc_No=" + acc_no.Text + " AND
                           Password=\'" + pswd.Text + "\')";
                cmd = new SqlCommand(sql, conn);
                using (dreader1 = cmd.ExecuteReader())
                {
                    if (dreader1.Read())
```

```
                {
                    Home_Panel.Location = Login_Panel.Location;
                    Login_Panel.Visible = false;
                    Home_Panel.Visible = true;

                    login_acc_no = acc_no.Text;
                    dreader1.Close();
                }
                else
                    MessageBox.Show("Invlid Account No / Password", "Login Failed");
            }
        }
        else
            MessageBox.Show("Please Enter Account No* and Password*", "Login Failed");
        Bal_Btn.Enabled = true;
    }

    private void Bal_Btn_Click(object sender, EventArgs e)
    {
        SqlDataReader dreader2;
        sql = "select Balance from dbo.LocalBank where Acc_No=" + acc_no.Text;
        cmd = new SqlCommand(sql, conn);
        dreader2 = cmd.ExecuteReader();
        if (dreader2.Read())
            Bal_lb.Text = "Balance: " + dreader2.GetValue(0)+" Rs";
        dreader2.Close();
        Bal_Btn.Enabled = false;
    }
    private void logout_Btn_Click(object sender, EventArgs e)
    {
        conn.Dispose();
        conn.Close();
        Application.Restart();
    }
    private void send_Btn_Click(object sender, EventArgs e)
    {
        deb_acc_no.Text = login_acc_no;
        deb_acc_no.Enabled = false;
        Bal_lb.Text = "";
        Transaction_Panel.Location = Login_Panel.Location;
        Home_Panel.Visible = false;
        Transaction_Panel.Visible =true ;
    }

    private void send_cnf_Btn_Click(object sender, EventArgs e)
    {
        SqlDataReader dreader3;
        SqlDataReader readBal;
        sql = "select Balance from dbo.LocalBank where Acc_No=" + deb_acc_no.Text;
        cmd = new SqlCommand(sql, conn);
        readBal = cmd.ExecuteReader();
        if(readBal.Read())
        {
            Bal=(float)readBal.GetDouble(0);
            readBal.Close();
        }

        SqlTransaction trans = conn.BeginTransaction();
        //Existance of Target Acct
        sql = "select * from dbo.LocalBank where Acc_No=" + Target_Account_No.Text;
        cmd = new SqlCommand(sql, conn,trans);
        dreader3 = cmd.ExecuteReader();
        if (dreader3.Read())//if exists
        {
            if (Transfer_Amount.Text != "")
            {
                float Transfer_amt = float.Parse(Transfer_Amount.Text);
                if (Transfer_amt > 0 && Transfer_amt < Bal)
                {
```

```
                        //Update
                        sql = @"Update dbo.LocalBank SET Balance=Balance-" + Transfer_amt + "
                                where Acc_No=" + deb_acc_no.Text + ";" +
                           "Update dbo.LocalBank SET Balance = Balance+" + Transfer_amt + "
                                where Acc_No = " + Target_Account_No.Text + ";";
                        cmd = new SqlCommand(sql, conn);
                        dreader3.Close();
                        cmd.Transaction = trans;
                        int ret = cmd.ExecuteNonQuery();
                        Console.WriteLine(ret);
                        trans.Commit();
                        MessageBox.Show("Rs." + Transfer_amt + "Sent To " +
                                    Target_Account_No.Text, " Transaction Successful!");
                        Transaction_Panel.Visible = false;
                        Home_Panel.Visible = true;
                    }
                    else
                        MessageBox.Show("No Sufficient Balance or Invalid Amount", "Alert!");
                }
                else
                    MessageBox.Show("Enter valid Amount", "Alert!");
            }
            else
                MessageBox.Show("Target Account Not Exist", "Transaction Failed!");
            Bal_Btn.Enabled = true;
        }

        private void cancel_Btn_Click(object sender, EventArgs e)
        {
            Transaction_Panel.Visible = false;
            Home_Panel.Visible = true;
        }

        private void Form1_KeyDown(object sender,KeyEventArgs ke)
        {
            if(ke.Alt && ke.KeyCode==Keys.F4)
            {
                conn.Dispose();
                conn.Close();
            }
        }
    }
}
```

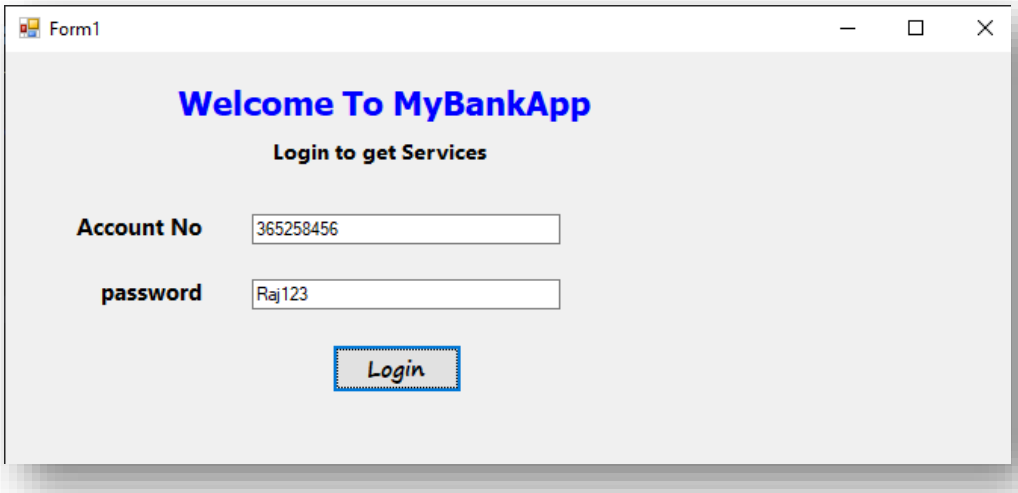
**Output:**

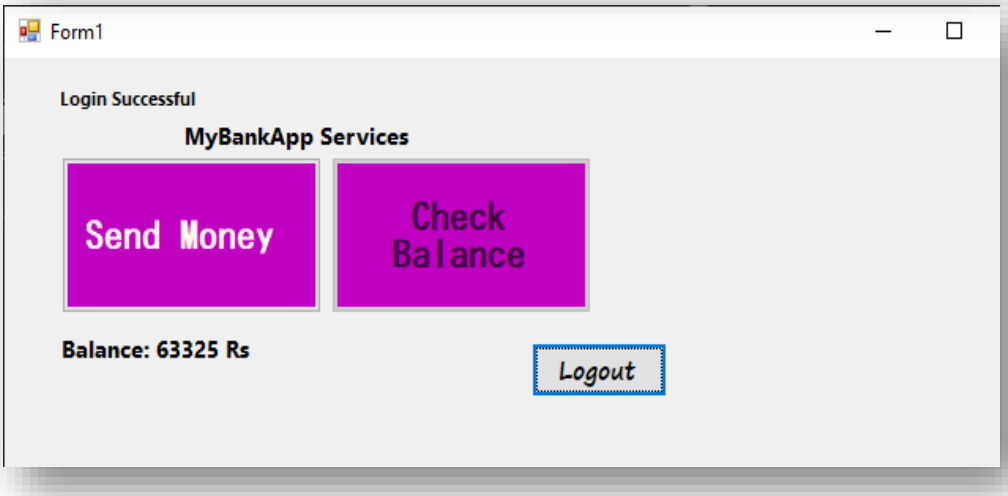
Database:

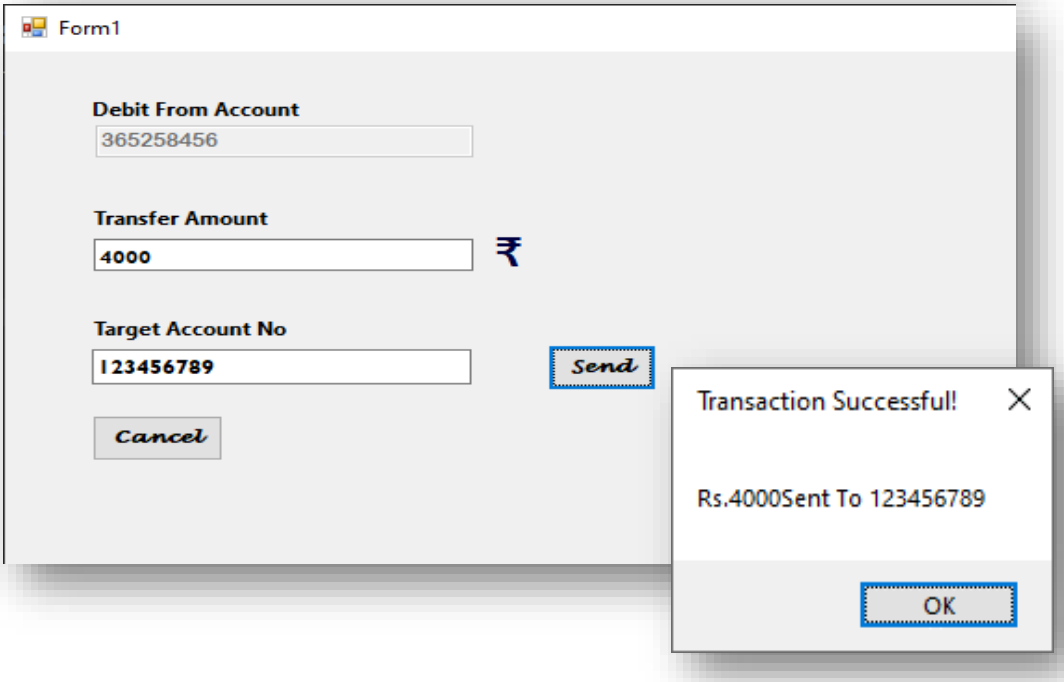
dbo.LocalBank [Data]

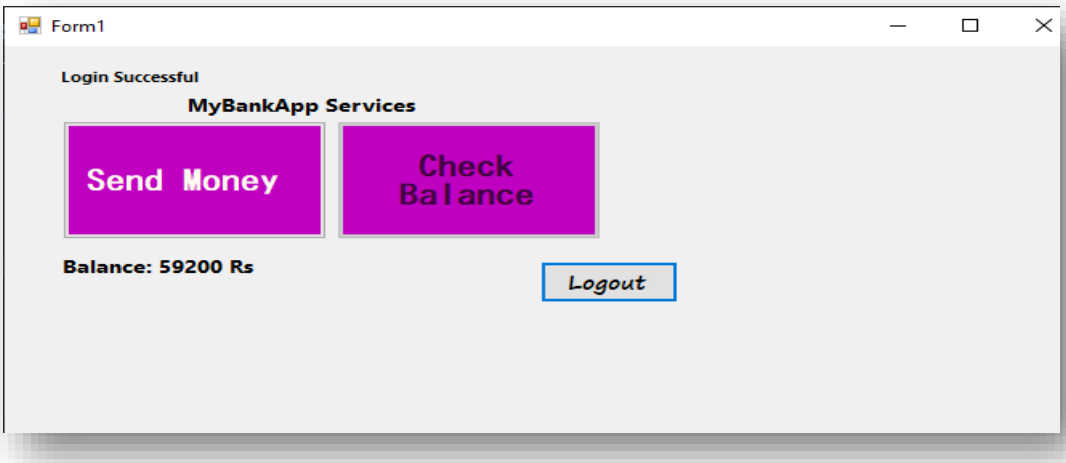
Max Rows: 1000

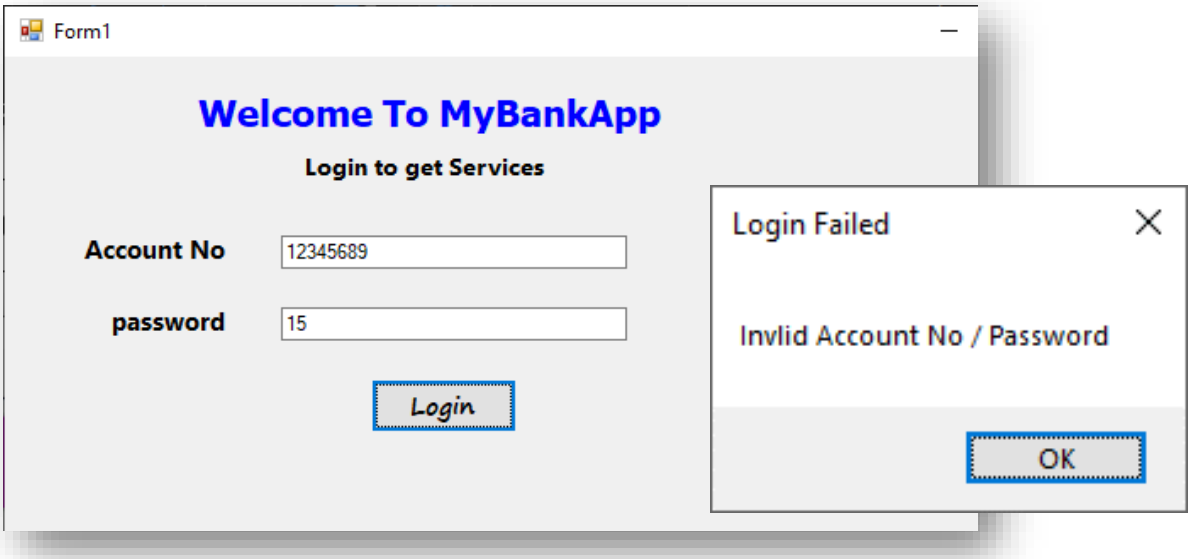
| Acc_No | Password | Name | Balance |
|---|---|---|---|
| 123456789 | Hem123 | Hemant Raj | 36450 |
| 128754358 | sha123 | Sharath KR | 79650 |
| 256845561 | Ani123 | Anil | 36601 |
| 365258456 | Raj123 | Rajath Mams | 63200 |
| NULL | NULL | NULL | NULL |

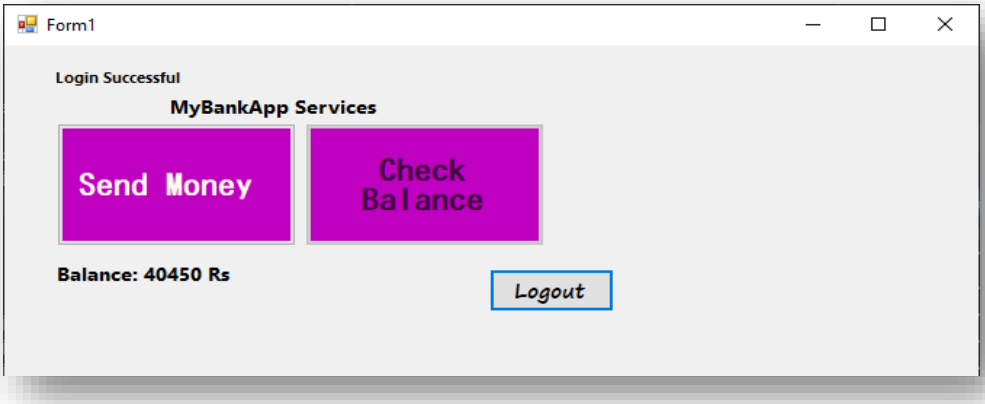

Form1
Welcome To MyBankApp
Login to get Services
Account No
365258456
password
Raj123
Login


Form1
Login Successful
MyBankApp Services
Send Money
Check Balance
Balance: 63325 Rs
Logout


Form1
Debit From Account
365258456
Transfer Amount
4000
₹
Target Account No
123456789
Send
Cancel
Transaction Successful!
Rs.4000Sent To 123456789
OK




**Database After Transaction:**

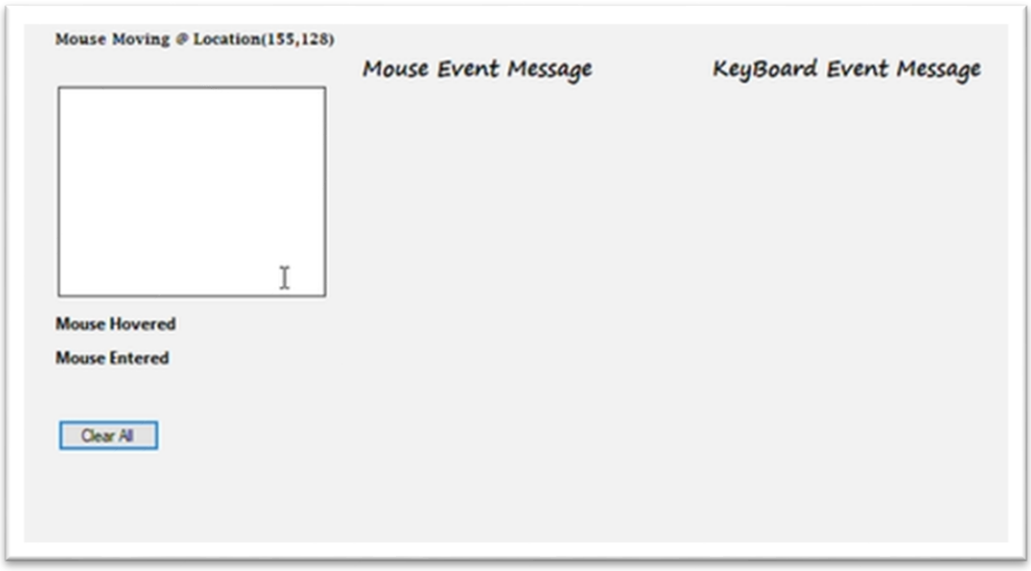
| | Acc_No | Password | Name | Balance |
|---|---|---|---|---|
| ▷ | 123456789 | Hem123 | Hemant Raj | 40450 |
| | 128754358 | sha123 | Sharath KR | 79650 |
| | 256845561 | Ani123 | Anil | 36601 |
| | 365258456 | Raj123 | Rajath Mams | 59200 |

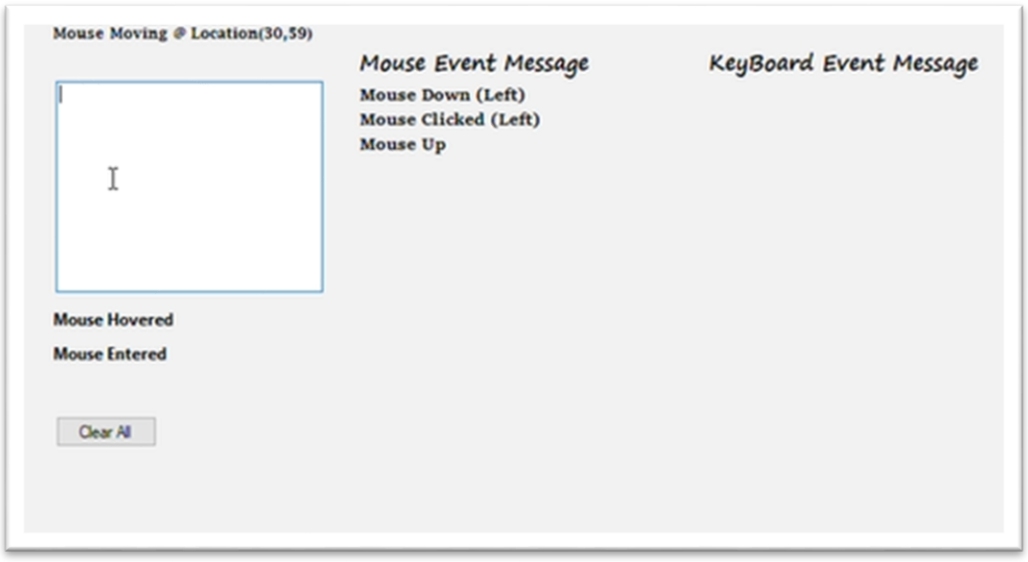
20. **Design a C# Windows Application program to implement keyboard event and mouse event.**

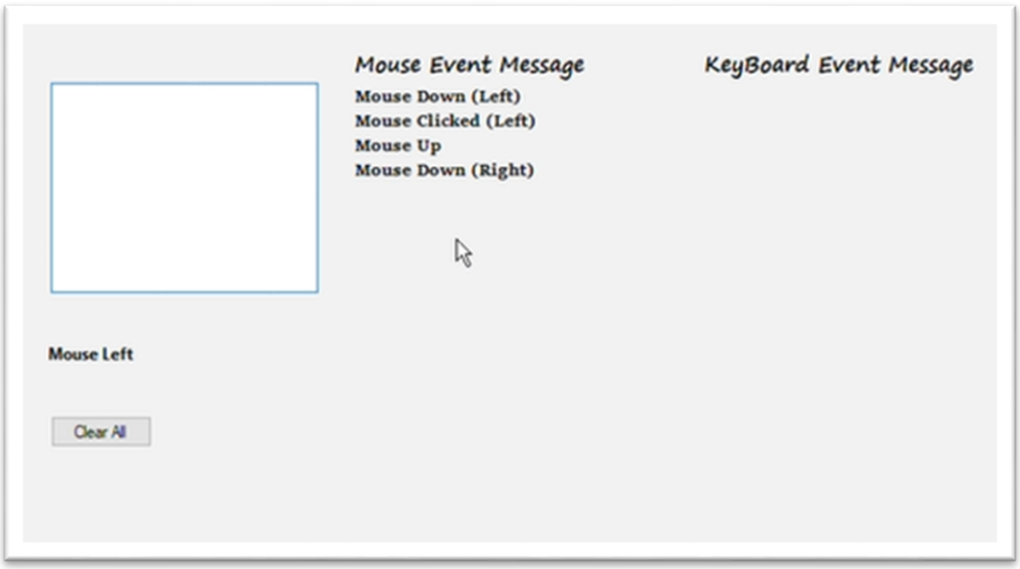
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Mouse_KeyBoard_Events
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void textBox1_MouseClick(object sender, MouseEventArgs e)
        {
            if (e.Button == MouseButtons.Left)
                Mouse_Message_lb.Text +="Mouse Clicked (Left)\n";
            else
                Mouse_Message_lb.Text += "Mouse Clicked (Right)\n";
        }

        private void textBox1_MouseDoubleClick(object sender, MouseEventArgs e)
        {
                Mouse_Message_lb.Text += "Mouse Double Clicked\n";
        }
        private void textBox1_MouseUp(object sender, MouseEventArgs e)
        {
                Mouse_Message_lb.Text += "Mouse Up\n";
        }
        private void textBox1_MouseDown(object sender, MouseEventArgs e)
        {
            if(e.Button==MouseButtons.Left)
                Mouse_Message_lb.Text += "Mouse Down (Left)\n";
            else
                Mouse_Message_lb.Text += "Mouse Down (Right)\n";
        }

        private void textBox1_MouseEnter(object sender, EventArgs e)
        {
            Enter_lb.Text = "Mouse Entered\n";
        }

        private void textBox1_MouseHover(object sender, EventArgs e)
        {
            Mouse_Hover.Text = "Mouse Hovered";
        }

        private void textBox1_MouseLeave(object sender, EventArgs e)
        {
            Enter_lb.Text = "Mouse Left\n";
            Moving_lb.Text = "";
            Mouse_Hover.Text = "";
        }

        private void textBox1_MouseMove(object sender, MouseEventArgs e)
        {
            Moving_lb.Text = "Mouse Moving @ Location(" + e.X+","+e.Y+")";
        }
```

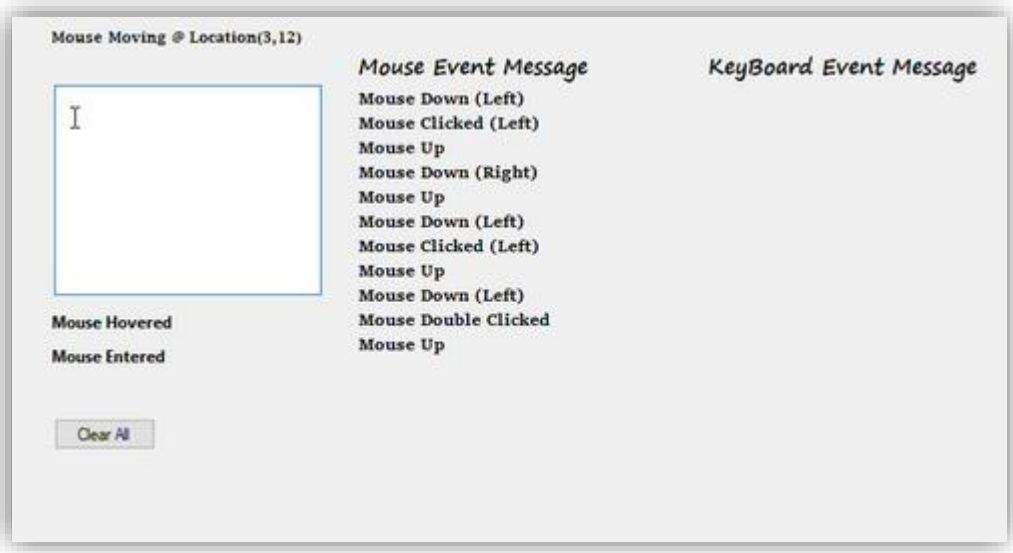
```
        private void Clear_All_Click(object sender, EventArgs e)
        {
            Mouse_Message_lb.Text = "";
            Enter_lb.Text = "";
        }
        private void textBox1_KeyPress(object sender, KeyPressEventArgs e)
        {
            KB_ev.Text = "Key Pressed";
            KB_Msg.Text ="\'"+e.KeyChar.ToString()+"\' key Pressed\n";
        }
        private void textBox1_KeyDown(object sender, KeyEventArgs e)
        {
            KB_up_dwn.Text = "Key Down";
        }

        private void textBox1_KeyUp(object sender, KeyEventArgs e)
        {
            KB_up_dwn.Text = "Key UP";
            KB_ev.Text = "";
        }
    }
}
```

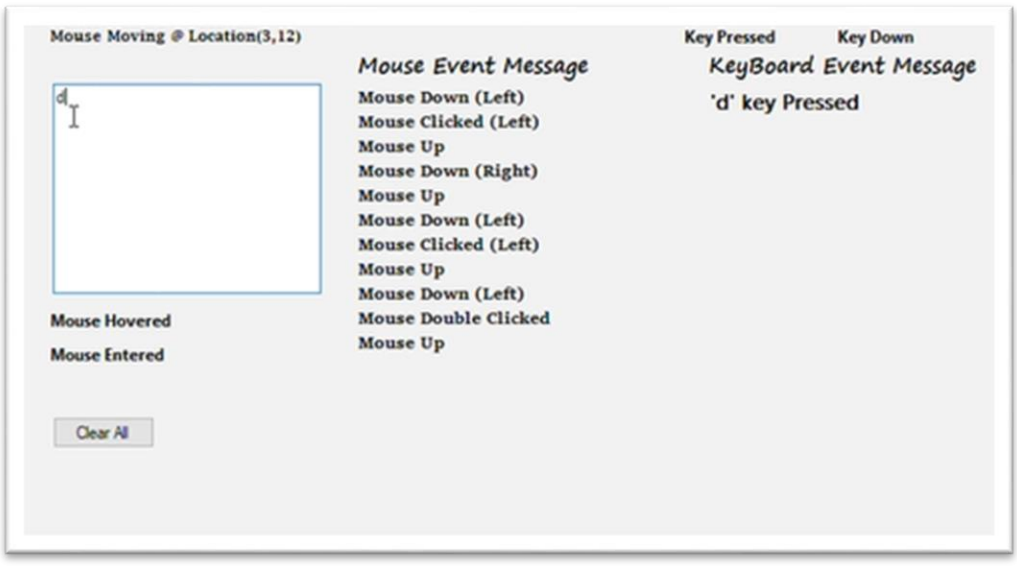
**Output:**

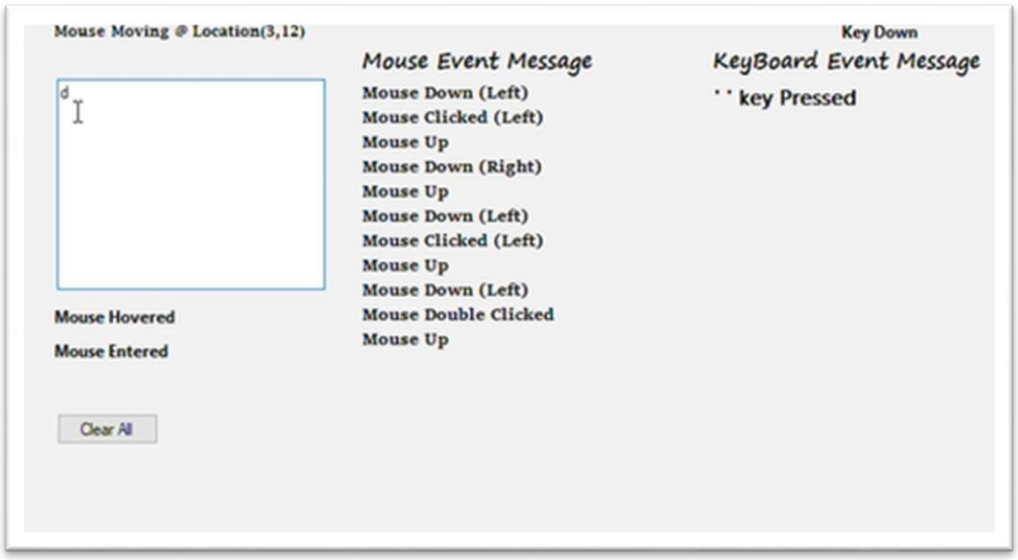


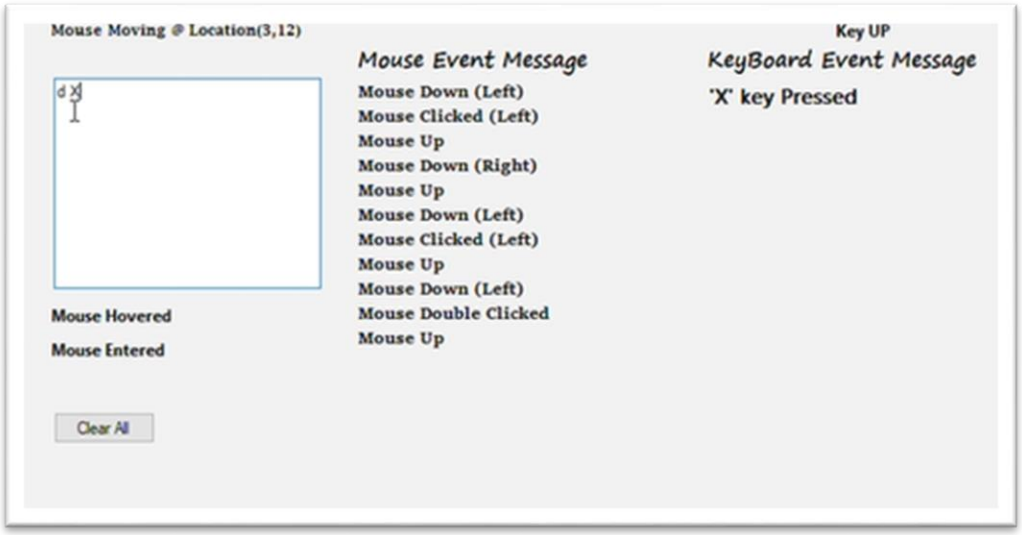



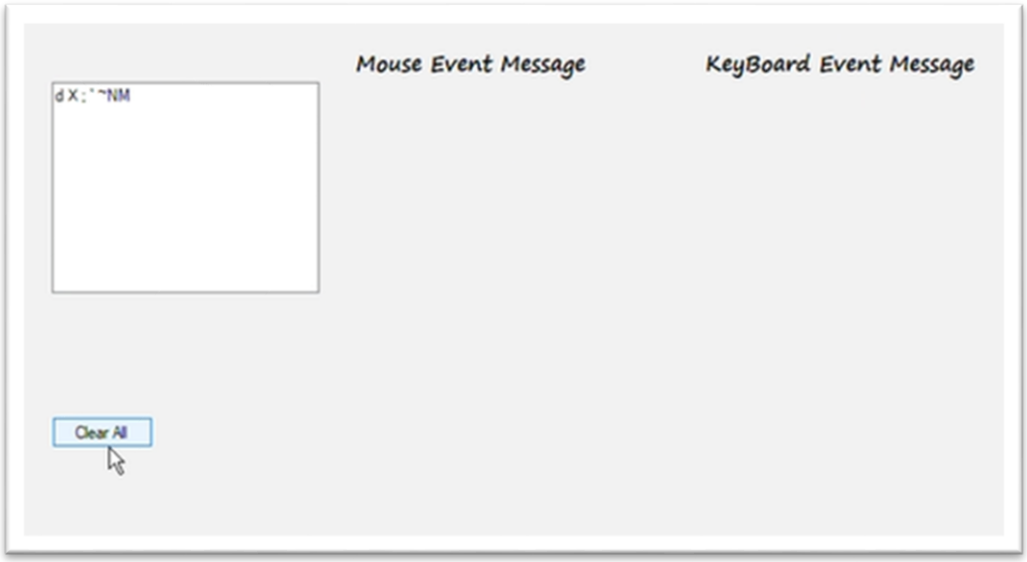

Mouse Event Message
KeyBoard Event Message
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Right)
Mouse Left
Clear All


Mouse Moving @ Location(3,12)
Mouse Event Message
KeyBoard Event Message
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Right)
Mouse Up
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Left)
Mouse Double Clicked
Mouse Up
Mouse Hovered
Mouse Entered
Clear All


Mouse Moving @ Location(3,12)
Key Pressed
Key Down
Mouse Event Message
KeyBoard Event Message
'd' key Pressed
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Right)
Mouse Up
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Left)
Mouse Double Clicked
Mouse Up
Mouse Hovered
Mouse Entered
Clear All


Mouse Moving @ Location(3,12)
Key Down
Mouse Event Message
KeyBoard Event Message
d
' ' key Pressed
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Right)
Mouse Up
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Left)
Mouse Double Clicked
Mouse Up
Mouse Hovered
Mouse Entered
Clear All

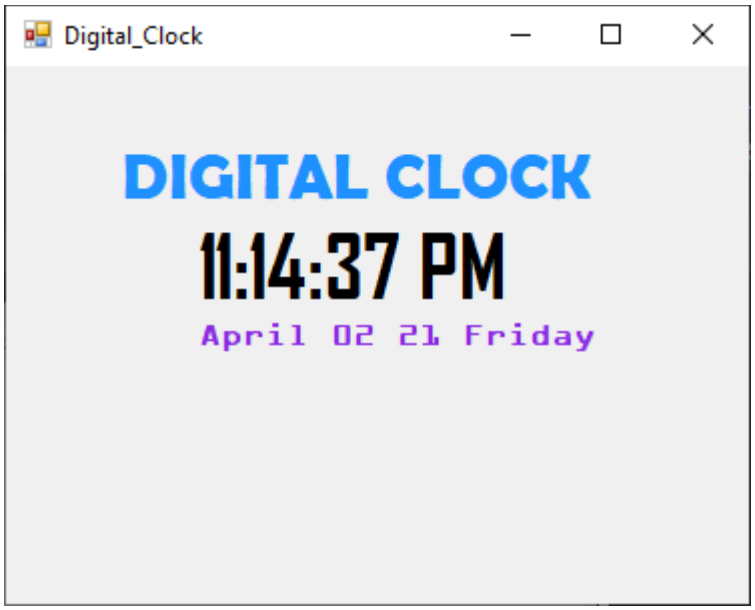

Mouse Moving @ Location(3,12)
Key UP
Mouse Event Message
KeyBoard Event Message
d X
'X' key Pressed
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Right)
Mouse Up
Mouse Down (Left)
Mouse Clicked (Left)
Mouse Up
Mouse Down (Left)
Mouse Double Clicked
Mouse Up
Mouse Hovered
Mouse Entered
Clear All


Mouse Event Message
KeyBoard Event Message
d X ; ' ^NM
Clear All

**21. Develop a winform application to create a Digital clock.**

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Digital_Clock
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void timer1_Tick(object sender, EventArgs e)
        {
            clock_lb.Text = DateTime.Now.ToString("hh:mm:ss tt");
            Date_lb.Text = DateTime.Now.ToString("MMMM dd yy dddd");
        }
    }
}
```

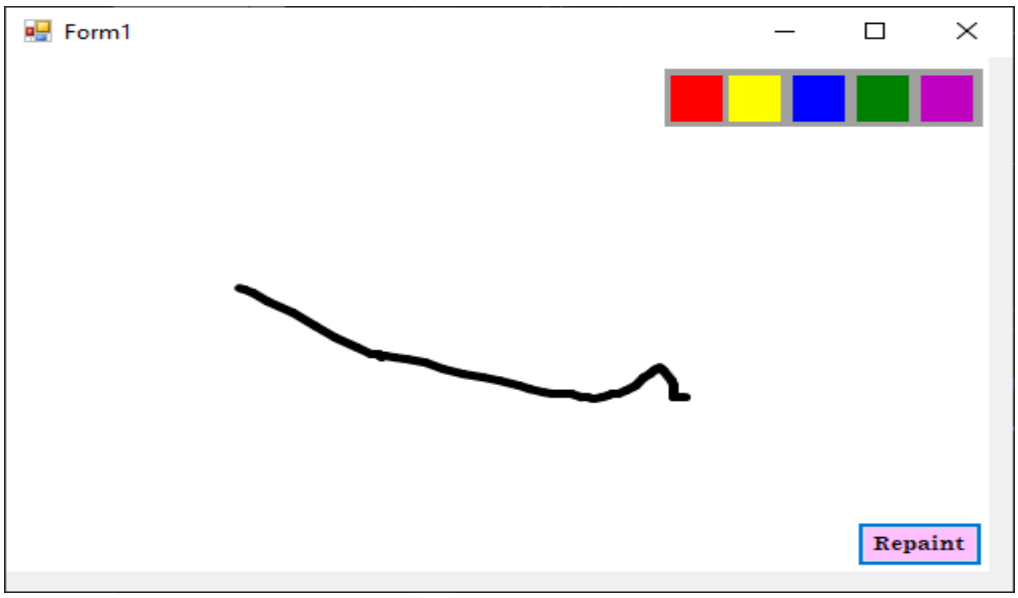
**Output:**

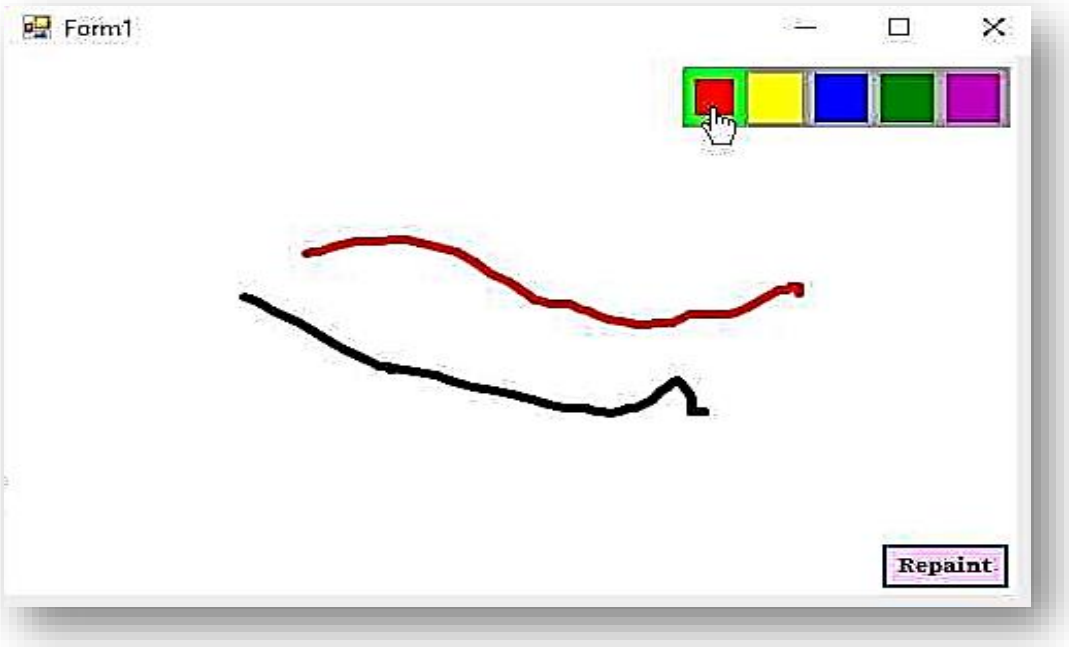


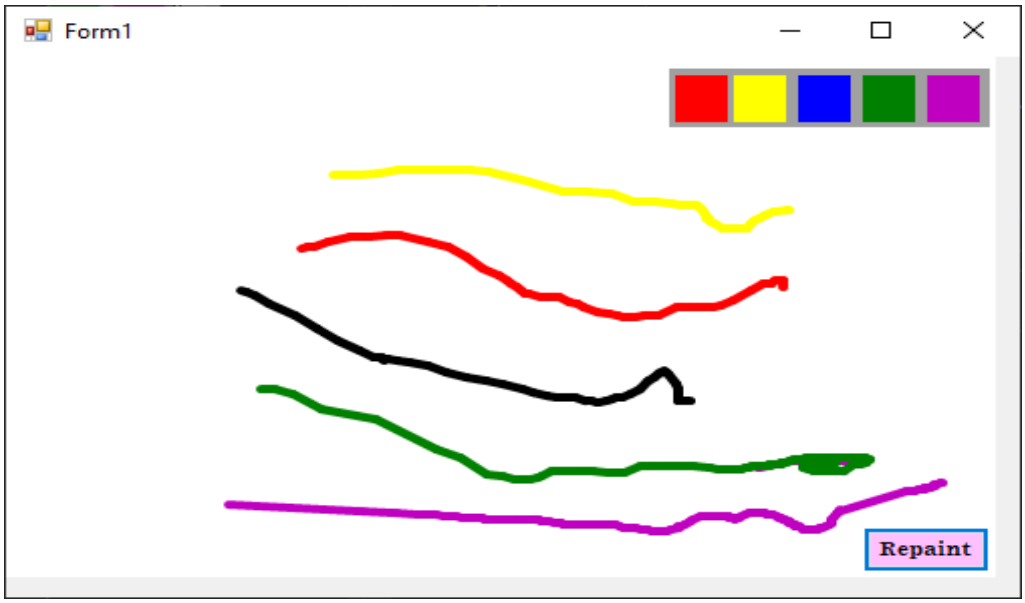
## 22. Develop a C# winform application for creating paint window.

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace PaintWindow
{
    public partial class Form1 : Form
    {
        Graphics g;
        int x = -1, y = -1;
        bool moving = false;
        Pen pen;
        public Form1()
        {
            InitializeComponent();
            g = panel1.CreateGraphics();
            g.SmoothingMode = System.Drawing.Drawing2D.SmoothingMode.AntiAlias;
            pen = new Pen(Color.Black, 5);
            pen.StartCap = pen.EndCap = System.Drawing.Drawing2D.LineCap.Round;
        }

        private void panel1_MouseDown(object sender, MouseEventArgs e)
        {
            moving = true;
            x = e.X;
            y = e.Y;

        }

        private void panel1_MouseUp(object sender, MouseEventArgs e)
        {
            moving = false;
            x = -1;
            y = -1;
        }

        private void panel1_MouseMove(object sender, MouseEventArgs e)
        {
            if(moving && x!=-1 && y!=-1 )
            {
                g.DrawLine(pen, new Point(x,y), e.Location);
                x = e.X;
                y = e.Y;
            }
        }

        private void pictureBox1_Click(object sender, EventArgs e)
        {
            PictureBox p = (PictureBox)sender;
            pen.Color = p.BackColor;
        }

        private void clr_Btn_Click(object sender, EventArgs e)
        {
            Application.Restart();
        }

    }
}
```

**Output:**



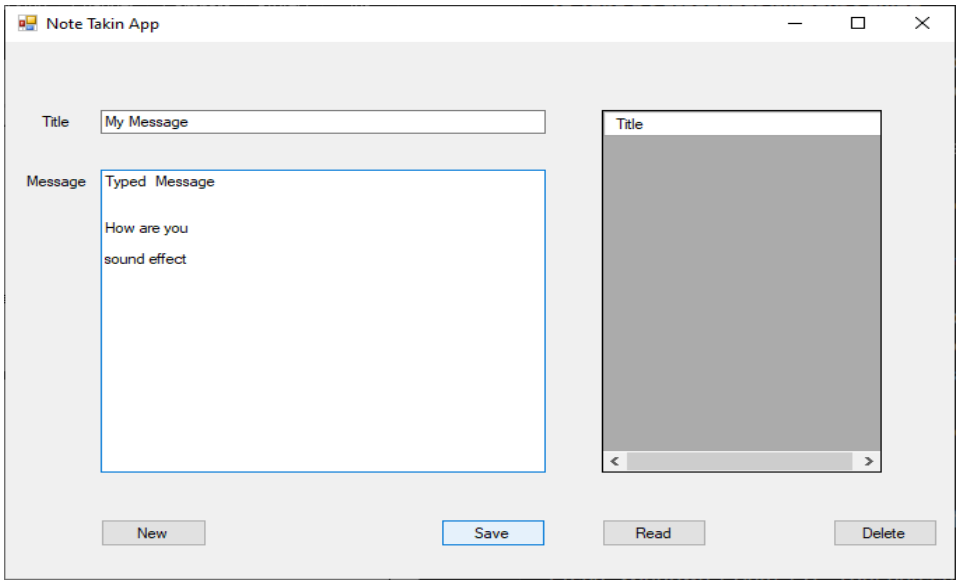
**23. Develop a winform application program for Prefix Game.**

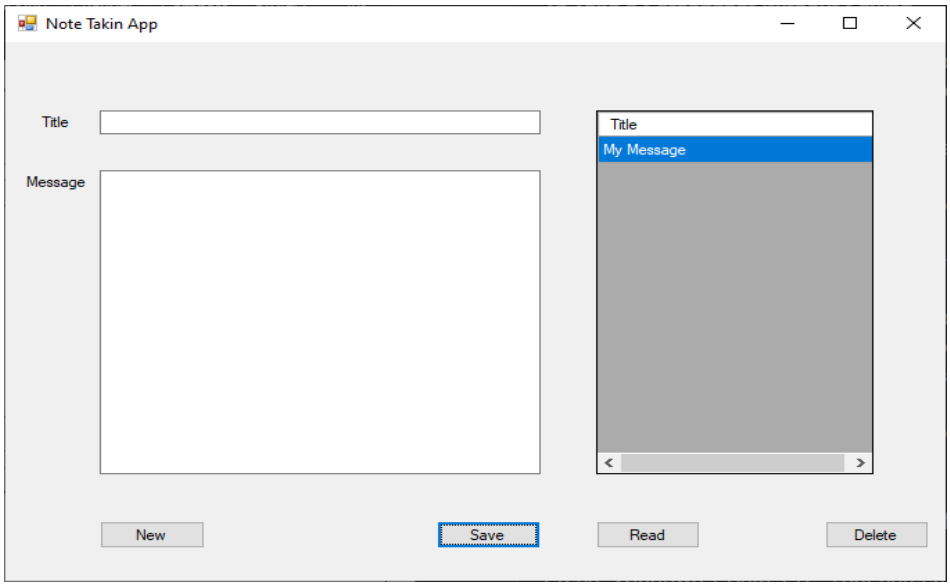
**24. Create a note taking windows form application.**

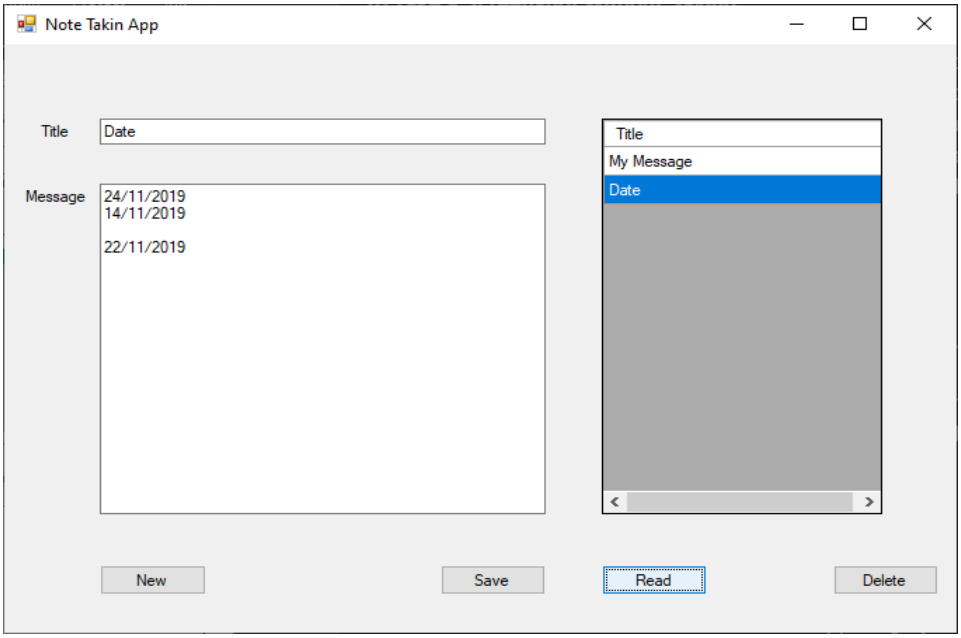
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Note_Taking_App
{
    public partial class Note_Taking_App : Form
    {
        DataTable table;
        public Note_Taking_App()
        {
            InitializeComponent();
        }

        private void Note_Taking_App_Load(object sender, EventArgs e)
        {
            table = new DataTable();
            table.Columns.Add("Title", typeof(string));
            table.Columns.Add("Messages", typeof(string));

            Title_List_DGV.DataSource = table;
            Title_List_DGV.Columns["Messages"].Visible = false;
            Title_List_DGV.Columns["Title"].Width = 200;
        }

        private void New_Click(object sender, EventArgs e)
        {
            Title_txt.Clear();
            Message_txt.Clear();
        }

        private void Save_Click(object sender, EventArgs e)
        {
            if (Title_txt.Text != "")
            {
                table.Rows.Add(Title_txt.Text, Message_txt.Text);
                Title_txt.Clear();
                Message_txt.Clear();
            }
            else
                MessageBox.Show("Please Enter Title!", "Note Taking App");

        }

        private void Read_Click(object sender, EventArgs e)
        {
            try
            {
                int index = Title_List_DGV.CurrentCell.RowIndex;
                if (index > -1)
                {
                    Title_txt.Text = table.Rows[index].ItemArray[0].ToString();
                    Message_txt.Text = table.Rows[index].ItemArray[1].ToString();
                }
            }
            catch(Exception exc)
            {
                MessageBox.Show("Please Select any Title!", "Note Taking App");
            }
        }
```

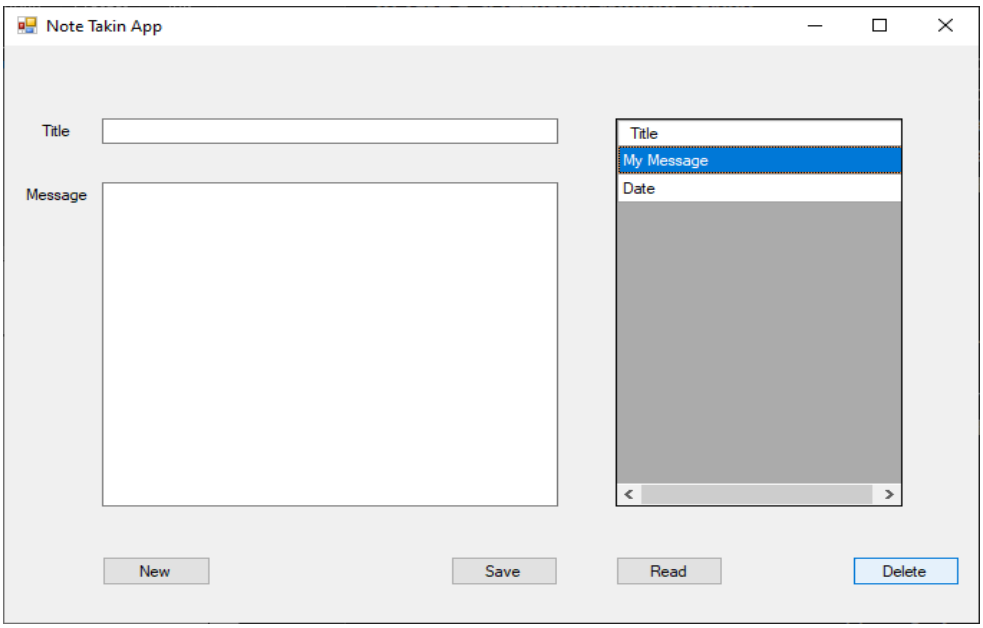
```
        private void Delete_Click(object sender, EventArgs e)
        {
            try
            {
                int index = Title_List_DGV.CurrentCell.RowIndex;
                table.Rows[index].Delete();
            }
            catch (Exception exc)
            {
                MessageBox.Show("Please Select any Title!", "Note Taking App");

            }
        }
    }
}
```

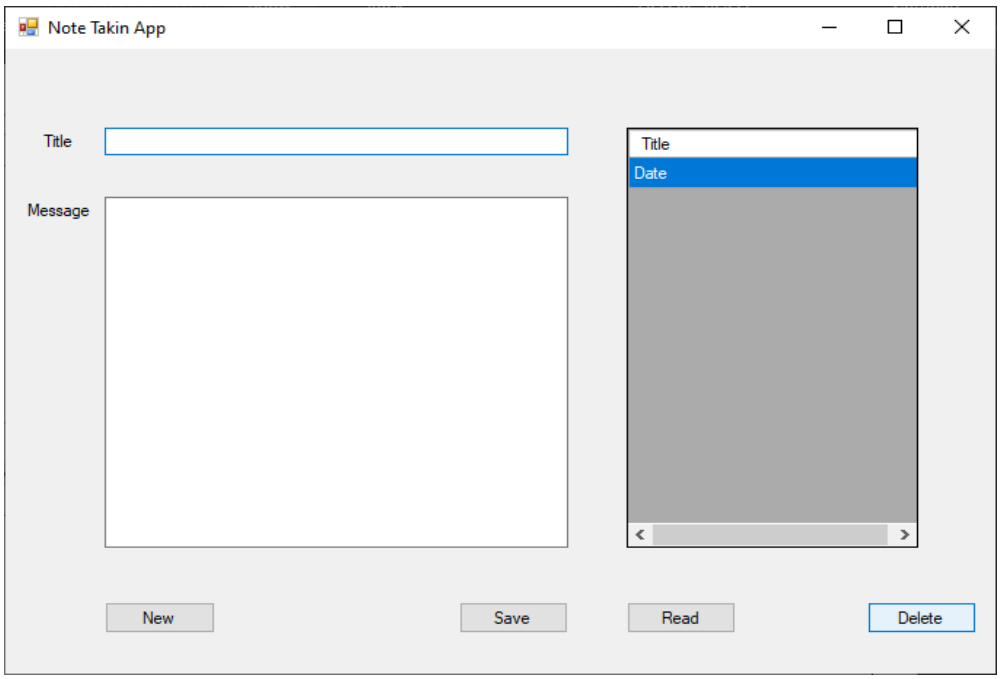
**Output:**




Note Takin App
Title
Date
Message
24/11/2019
14/11/2019
22/11/2019
Title
My Message
Date
New
Save
Read
Delete

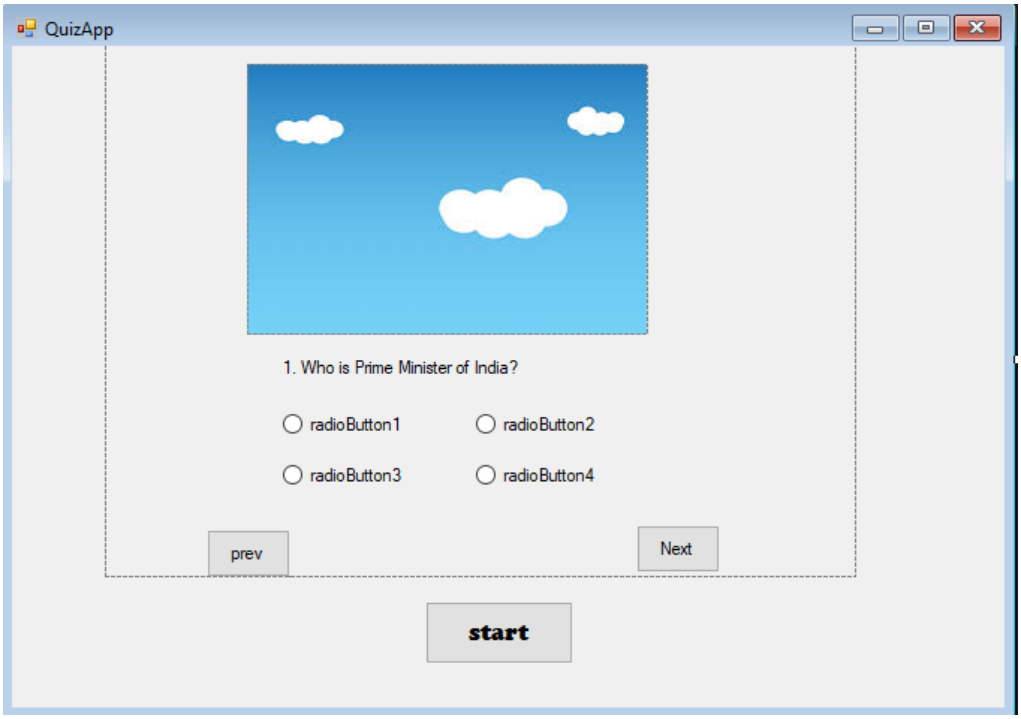

Note Takin App
Title
Message
Title
My Message
Date
New
Save
Read
Delete


Note Takin App
Title
Message
Title
Date
New
Save
Read
Delete

**25. Design a windows form application to upload and download files.**

## 26. Design a quiz program in windows application.

**Form1.cs [Design] :**



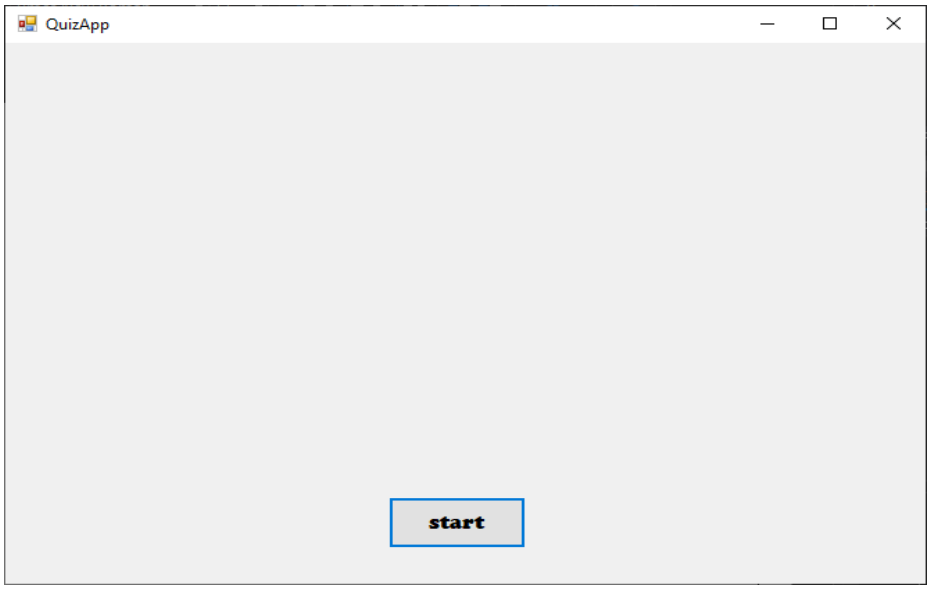

**Form1.cs [code] :**

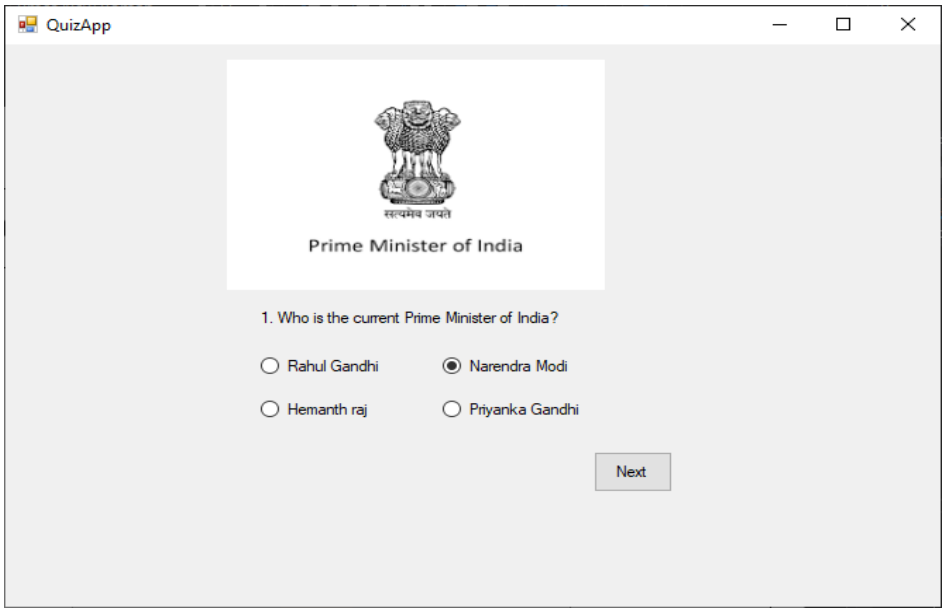
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Quiz_Form_App
{
    public partial class QuizApp : Form
    {
        int[] score_arr=new int[6];
        int qtn_no;
        public QuizApp()
        {
            InitializeComponent();
            panel1.Visible = false;
            pictureBox1.SizeMode = PictureBoxSizeMode.StretchImage;
        }

        private void start_Click(object sender, EventArgs e)
        {
            prev.Visible = false;
            panel1.Visible = true;
            start.Visible = false;
            qtn_no = 1;
            askQuestion(qtn_no);
        }

        private void Next_Click(object sender, EventArgs e)
        {
            RadioButton[] corrct_Ans = {null,ans2,ans3,ans2,ans3,ans1};

            if (corrct_Ans[qtn_no].Checked)
```

```
            score_arr[qtn_no] = 10;
        else
            score_arr[qtn_no] = 0;

        if (qtn_no < 5)
        {
            for (int i = 1; i < corrct_Ans.Length; i++)
                corrct_Ans[i].Checked = false;
            askQuestion(++qtn_no);
        }
        else
            submit();
    }

    private void prev_Click(object sender, EventArgs e)
    {
        askQuestion(--qtn_no);
    }
    private void askQuestion(int qtn_no)
    {
         if(qtn_no==5)
            Next.Text = "submit";
         else
            Next.Text = "Next";

        switch(qtn_no)
        {
            case 1:
                prev.Visible = false;
                pictureBox1.Image=new Bitmap("C:\\Users\\Sanjay-PC\\source\\repos
                \\Sanjay_C#_Lab\\Quiz_Form_App\\Quiz_Images\\prime.png") ;
                qtn.Text = "1. Who is the current Prime Minister of India?";
                ans1.Text = "Rahul Gandhi";
                ans2.Text = "Narendra Modi";
                ans3.Text = "Hemanth raj";
                ans4.Text = "Priyanka Gandhi";
                break;
            case 2:
                prev.Visible = true;
                pictureBox1.Image = new Bitmap("C:\\Users\\Sanjay- PC
                \\source\\repos\\Sanjay_C#_Lab\\Quiz_Form_App\\Quiz_Images\\
                AlbertEinstein.png");
                qtn.Text = "2. Name of the Scientist";
                ans1.Text = "Vijay Vincent";
                ans2.Text = "Rajath Mams";
                ans3.Text = "Einstien";
                ans4.Text = "Newton";
                break;
            case 3:
                pictureBox1.Image = new Bitmap("C:\\Users\\Sanjay-PC\\source
                \\repos\\Sanjay_C#_Lab\\Quiz_Form_App\\Quiz_Images\\solveIt.png");
                qtn.Text = "3. Answer = ";
                ans1.Text = "10";
                ans2.Text = "9";
                ans3.Text = "0";
                ans4.Text = "1";
                break;
            case 4:
                pictureBox1.Image = new Bitmap("C:\\Users\\Sanjay-PC\\source\\repos
                \\Sanjay_C#_Lab\\Quiz_Form_App\\Quiz_Images\\2011.png");
                qtn.Text = "4. Who Won the ICC Worldcup 2011? ";
                ans1.Text = "RCB";
                ans2.Text = "Australia";
                ans3.Text = "India";
                ans4.Text = "England";
                break;
            case 5:
                pictureBox1.Image = new Bitmap("C:\\Users\\Sanjay-PC\\source\\repos
                \\Sanjay_C#_Lab\\Quiz_Form_App\\Quiz_Images\\sky.png");
```

```
                    qtn.Text = "5. What is the Color of Sky? ";
                    ans1.Text = "Blue";
                    ans2.Text = "green";
                    ans3.Text = "Orange";
                    ans4.Text = "Red";
                    break;
                }
            }

            private void submit()
            {
                panel1.Visible = false;
                int score = score_arr.Sum();
                Label res =new Label();
                res.Size = new Size(500, 200);
                res.Location = new Point(this.Height/2, this.Width/2);
                res.Font = new Font("Ariel", 20, FontStyle.Bold);
                res.Text = "Your Score is " + score+" /50";
                this.Controls.Add(res);
            }
        }
    }
```

**Output:**



QuizApp

2. Name of the Scientist

- (●) Vijay Vincent
- ( ) Rajath Mams
- ( ) Einstien
- ( ) Newton

prev Next

QuizApp

5. What is the Color of Sky?

- (●) Blue
- ( ) green
- ( ) Orange
- ( ) Red

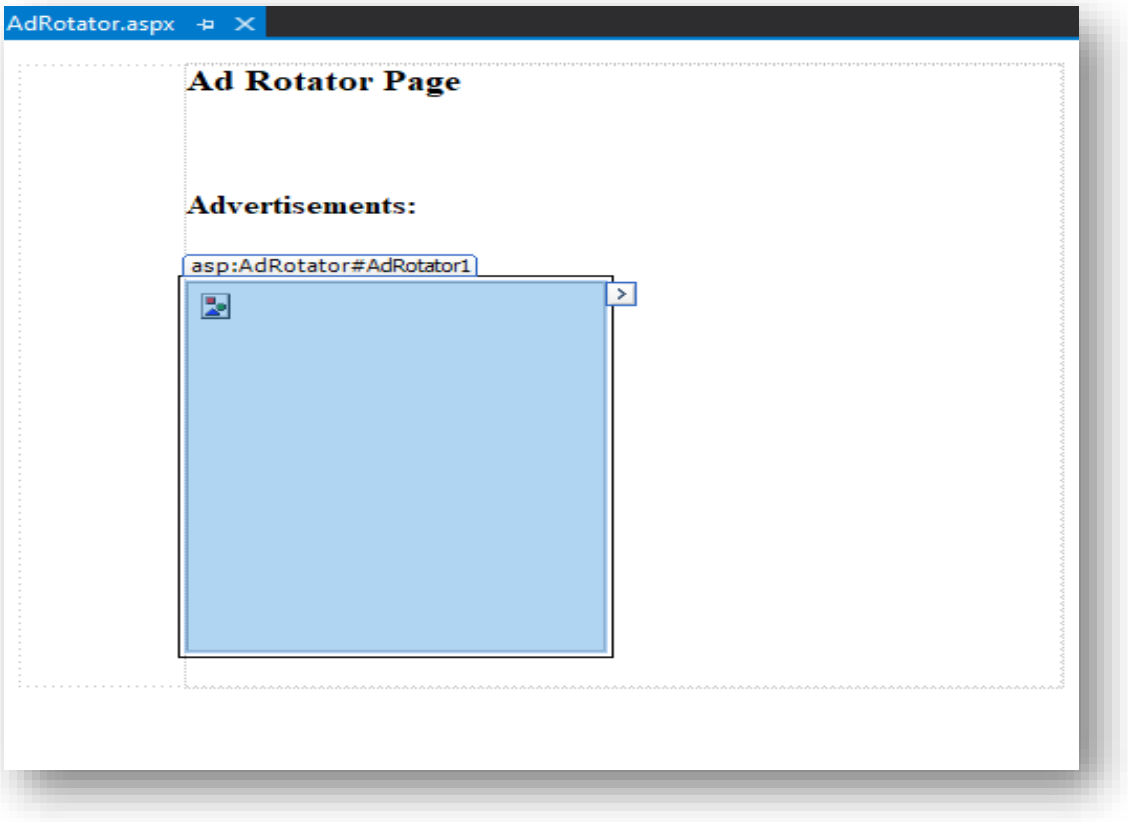
prev submit

QuizApp

**Your Score is 20 /50**

**27. Design a web application form using ads rotator control and create effective assignment.**

**Design Window:**



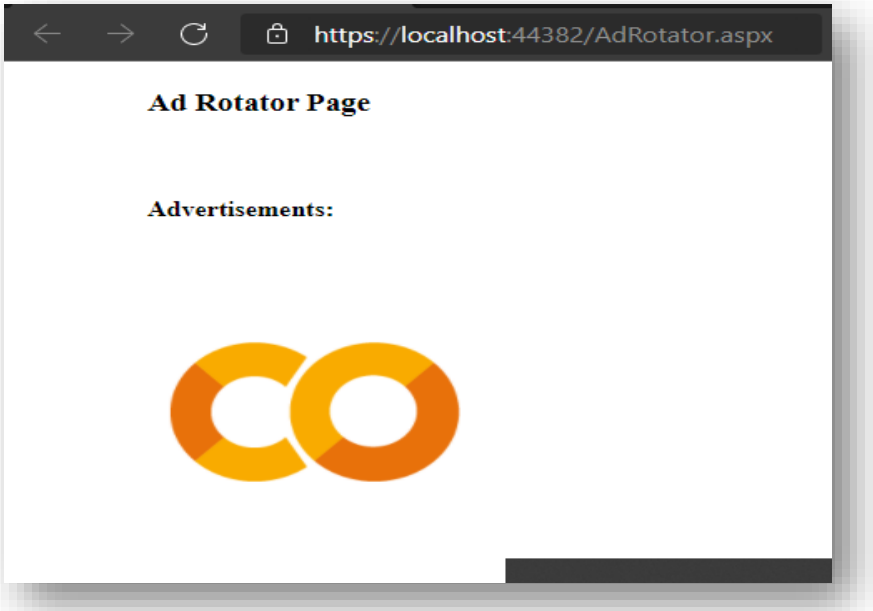

**AdRotator.aspx:**

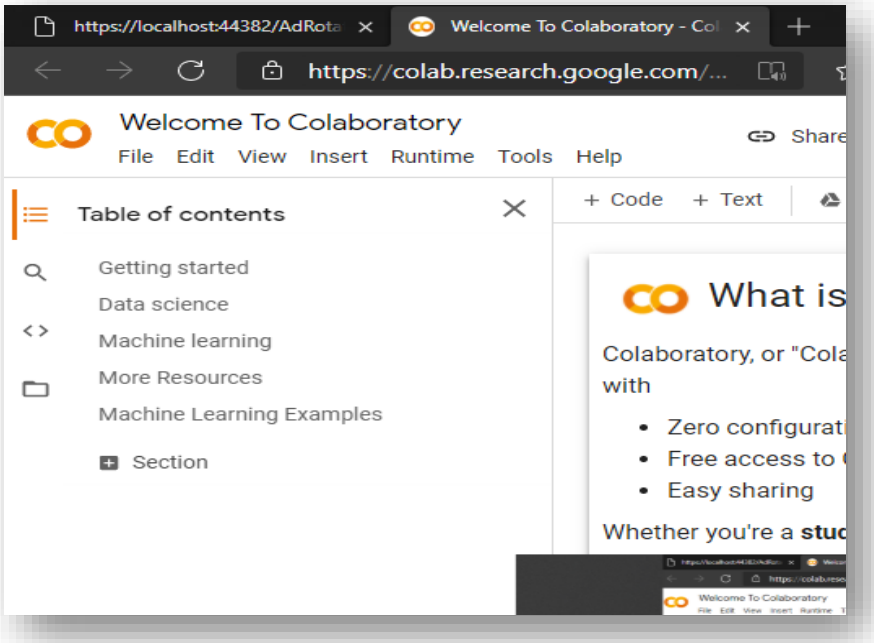
```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="AdRotator.aspx.cs"
Inherits="ADRotator.AdRotator" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title></title>
</head>
<body>
    <form id="form1" runat="server">
        <div style="height: 384px; margin-left: 80px;">
           <h3>Ad Rotator Page</h3>
            <br />
            <h4>Advertisements:</h4><br />
            <asp:AdRotator ID="AdRotator1" runat="server" AdvertisementFile="~/Ads.xml"
             Target="_blank" Width="200px" />
        </div>
    </form>
</body>
</html>
```

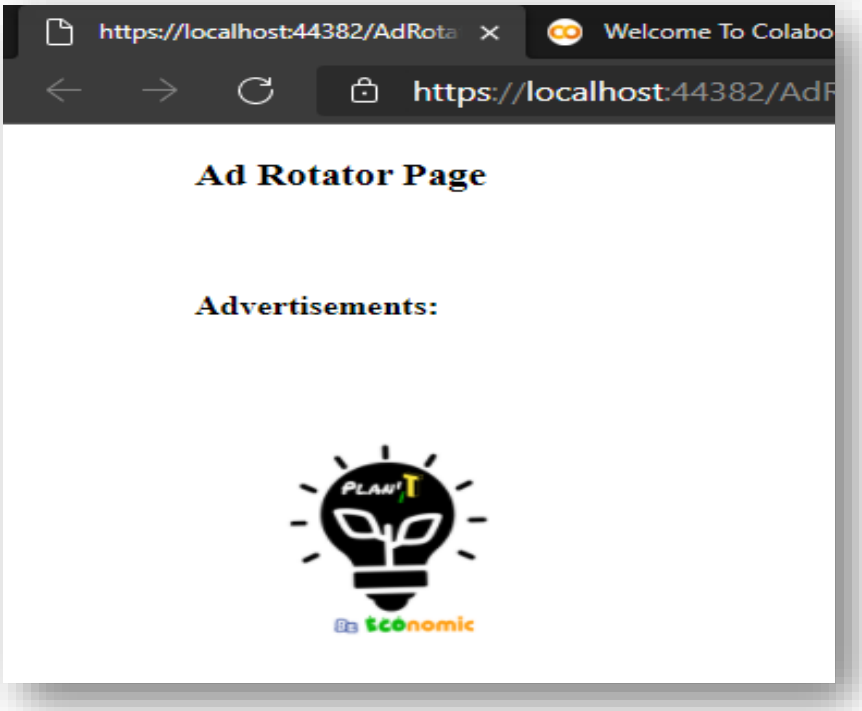
**Ads.xml :**

```
<?xml version="1.0" encoding="utf-8" ?>
<Advertisements>
  <Ad>
    <ImageUrl>Images/GoogleAd.png</ImageUrl>
    <AlternateText>Type Google</AlternateText>
    <NavigateUrl>https://www.google.co.in/</NavigateUrl>
    <Impressions>20</Impressions>
    <Keyword>Google</Keyword>
  </Ad>
  <Ad>
    <ImageUrl>Images/ArecaAd.jpg</ImageUrl>
    <AlternateText>ArecaAD</AlternateText>
    <NavigateUrl>https://imgbin.com/free-png/areca-nut</NavigateUrl>
    <Impressions>20</Impressions>
    <Keyword>Business</Keyword>
  </Ad>
  <Ad>
    <ImageUrl>Images/colabAd.png</ImageUrl>
    <AlternateText>Type Googlecolab</AlternateText>
    <NavigateUrl>https://colab.research.google.com/</NavigateUrl>
    <Impressions>20</Impressions>
    <Keyword>Google</Keyword>
  </Ad>
  <Ad>
    <ImageUrl>Images/plain_logo.png</ImageUrl>
    <AlternateText>Type PlanIT</AlternateText>
    <NavigateUrl>https://www.facebook.com/planitinfos/</NavigateUrl>
    <Impressions>20</Impressions>
    <Keyword>Business</Keyword>
  </Ad>
  <Ad>
    <ImageUrl>Images/TeslaAd.png</ImageUrl>
    <AlternateText>Type Tesla</AlternateText>
    <NavigateUrl>https://www.tesla.com/</NavigateUrl>
    <Impressions>20</Impressions>
    <Keyword>car</Keyword>
  </Ad>
</Advertisements>
```

**Output:**

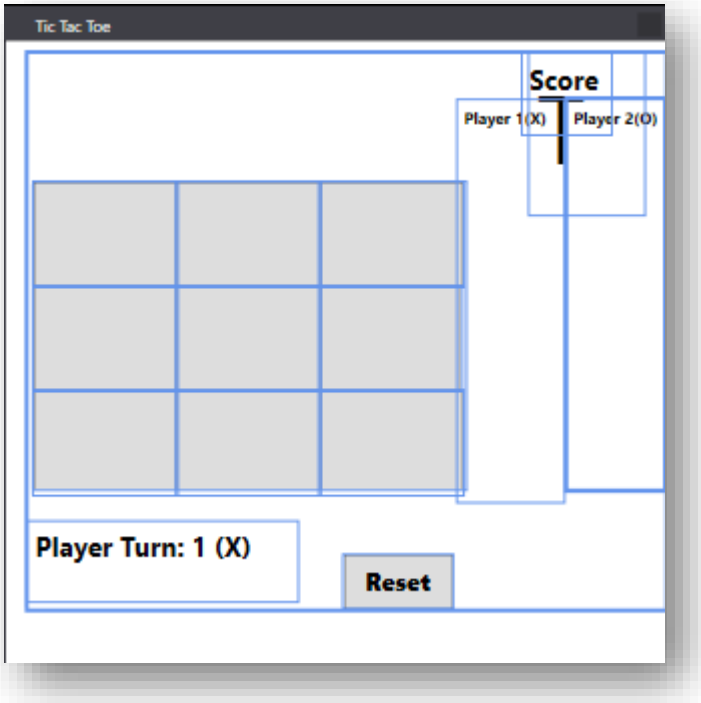

https://localhost:44382/AdRotator.aspx
Ad Rotator Page
Advertisements:


https://localhost:44382/AdRota
Welcome To Colaboratory - Col
https://colab.research.google.com/...
Welcome To Colaboratory
File Edit View Insert Runtime Tools Help
Share
Table of contents
Getting started
Data science
Machine learning
More Resources
Machine Learning Examples
Section
+ Code
+ Text
What is
Colaboratory, or "Cola
with
Zero configurati
Free access to
Easy sharing
Whether you're a stuc


https://localhost:44382/AdRota
Welcome To Colabo
https://localhost:44382/AdR
Ad Rotator Page
Advertisements:
PLANIT
tconomic

## 28. Creating Game Tic Tac Toe with WPF.

**MainWindow.xaml [Design] :**



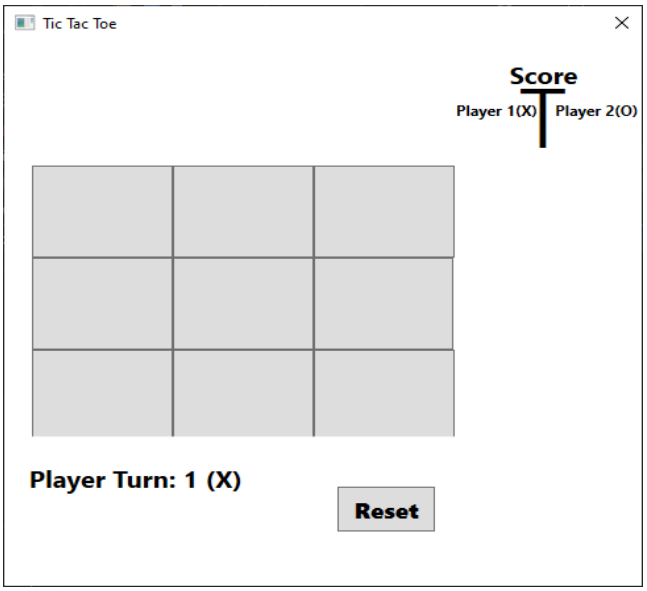

**MainWindow.xaml [code] :**

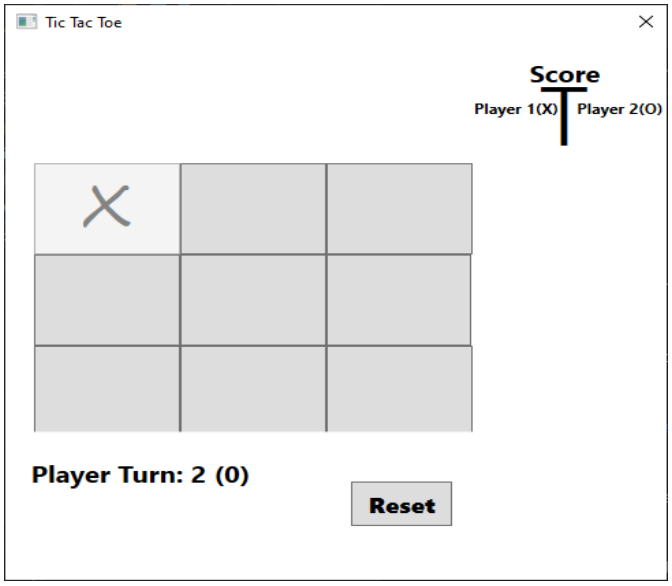
```
using System.Windows;
using System.Windows.Controls;

namespace Tic_Toe_App
{
    /// <summary>
    /// Interaction logic for MainWindow.xaml
    /// </summary>
    public partial class MainWindow : Window
    {
        int turn,round,pl1_pt,pl2_pt;
        public MainWindow()
        {
            InitializeComponent();
            turn = 1;
        }
        private void Button_Click(object sender,RoutedEventArgs e)
        {
            Button btn = sender as Button;
            if(turn==1)
            {
                btn.Content = "X";
                p_turn.Content= "Player Turn: 2 (0)";
                turn = 2;
            }
            else if(turn==2)
            {
                btn.Content = "O";
                p_turn.Content = "Player Turn: 1 (X)";
                turn = 1;
            }
            round += 1;
            btn.IsEnabled = false;
            win(btn.Content.ToString());
        }
        private void win(string btnContent)
```

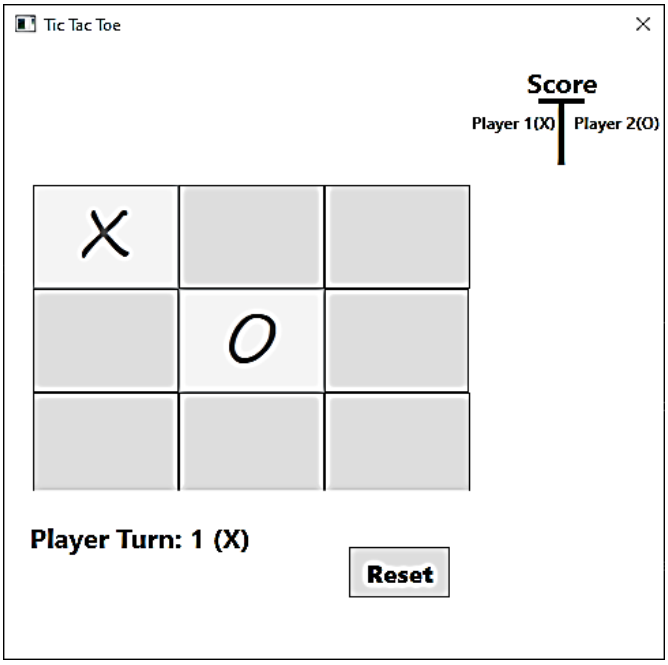
```
{
    if (( Button1.Content as string == btnContent &
          Button2.Content as string == btnContent &
          Button3.Content as string == btnContent) |
        ( Button4.Content as string == btnContent &
          Button5.Content as string == btnContent &
          Button6.Content as string == btnContent) |
        ( Button7.Content as string == btnContent &
          Button8.Content as string == btnContent &
          Button9.Content as string == btnContent) |
        ( Button1.Content as string == btnContent &
          Button4.Content as string == btnContent &
          Button7.Content as string == btnContent) |
        ( Button2.Content as string == btnContent &
          Button5.Content as string == btnContent &
          Button8.Content as string == btnContent) |
        ( Button3.Content as string == btnContent &
          Button6.Content as string == btnContent &
          Button9.Content as string == btnContent) |
        ( Button1.Content as string == btnContent &
          Button5.Content as string == btnContent &
          Button9.Content as string == btnContent) |
        ( Button3.Content as string == btnContent &
          Button5.Content as string == btnContent &
          Button7.Content as string == btnContent ))
    {
        if (btnContent == "X")
        {
            disableButtons();
            MessageBox.Show("Player 1 Wins");
            Player1_lb.Content = "Player1(X)\n  " + (++pl1_pt);
        }
        else if (btnContent == "O")
        {
            disableButtons();
            MessageBox.Show("Player 2 Wins");
            Player2_lb.Content = "Player2(O)\n   " + (++pl2_pt);
        }
        if (turn == 1)
            turn = 2;
        else
            turn = 1;
        Reset_All();
    }
    else if(round==9)
    {
        MessageBox.Show("Draw");
        Reset_All();
    }
}
private void disableButtons()
 {
    foreach(Button btn in WrapPanel1.Children)
    {
        btn.IsEnabled = false;
    }
 }

private void Reset_All()
{
    foreach (Button btn in WrapPanel1.Children)
    {
        round = 0;
        p_turn.Content = "Player Turn: "+turn;
        btn.Content = "";
        btn.IsEnabled = true;
    }
}
```

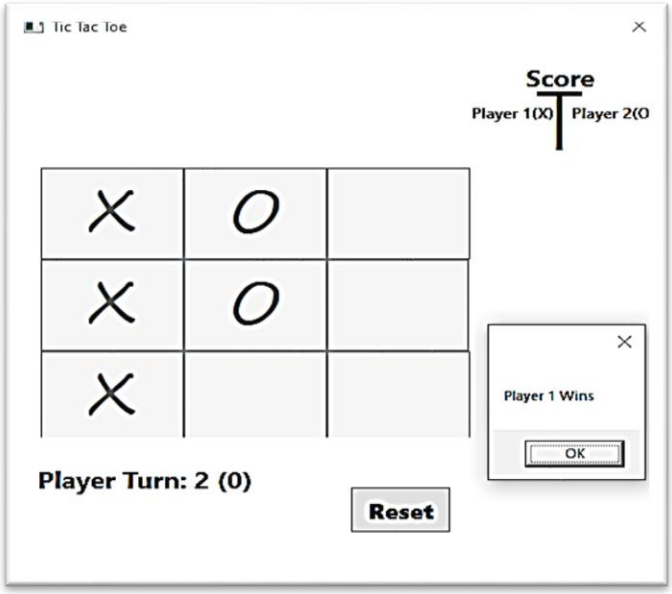
```
        private void Reset_Click(object sender, RoutedEventArgs e)
        {
            Reset_All();
        }
    }
}
```

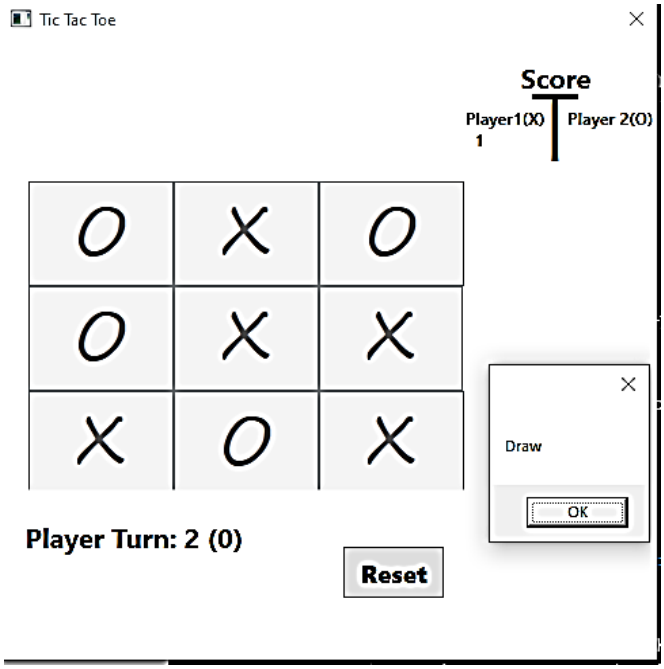
**Output:**

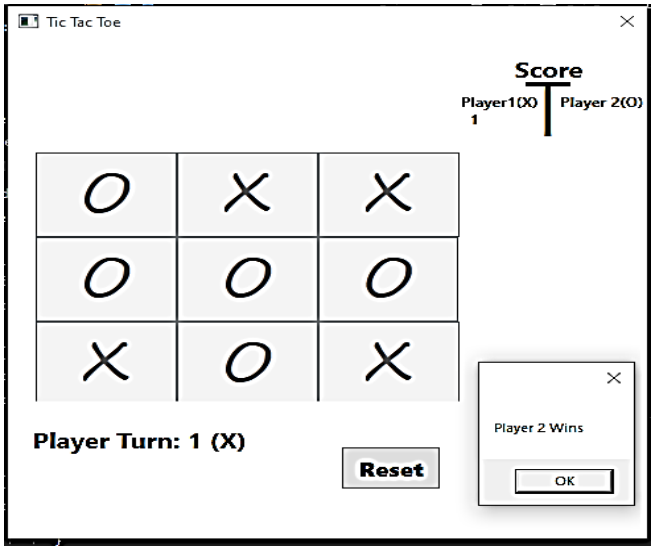


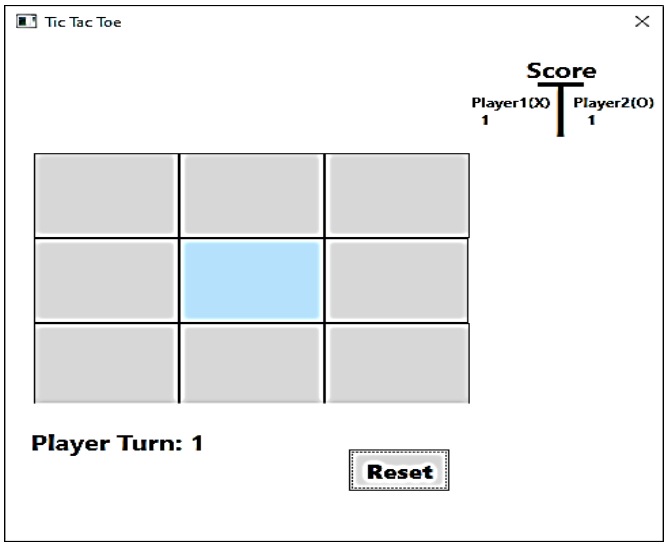




Tic Tac Toe
Score
Player 1(X)
Player 2(O)
X
O
Player Turn: 1 (X)
Reset


Tic Tac Toe
Score
Player 1(X)
Player 2(O
X
O
X
O
X
Player 1 Wins
OK
Player Turn: 2 (0)
Reset

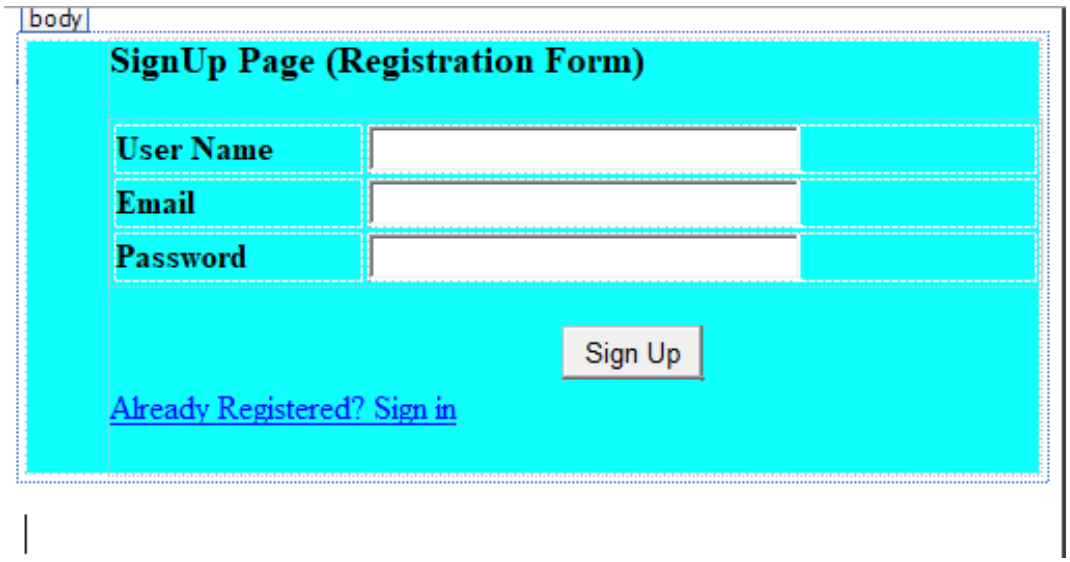

Tic Tac Toe
Score
Player1(X)
Player 2(O)
1
O
X
O
O
X
X
X
O
X
Draw
OK
Player Turn: 2 (0)
Reset


Tic Tac Toe
Score
Player1(X)
1
Player 2(O)
O X X
O O O
X O X
Player Turn: 1 (X)
Reset
Player 2 Wins
OK


Tic Tac Toe
Score
Player1(X)
1
Player2(O)
1
Player Turn: 1
Reset

**29. Develop an ASP.NET application program to create a Sign-Up page using validation controls.**

**Design Window [SignUp.aspx] :**




**Design Window [SignIn.aspx] :**

**SignUp.aspx :**

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="SignUp.aspx.cs"
Inherits="SignUp_Page.WebForm1" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>SignUp Page</title>
    <style type="text/css">

        .auto-style1 {
            width: 200px;
        }
        #SignUpBtn{
            margin-left: 218px;
        }
        #form1{
             background-color:#0fffff;
         }
    </style>
</head>
<body>
    <form id="form1" runat="server" method="post">
        <div style="height: 210px; margin-left: 41px">
            <h3>SignUp Page (Registration Form)</h3>
            <!--html component inside asp-->
            <table style="width: 100%;">
                <tr>
                    <td><label for="Name"><strong>User Name</strong></label></td>
                    <td><input  name="Name" type="text" autocomplete="on" required
                            class="auto-style1"/></td>
                </tr>
                <tr>
                    <td><label for="Email"><strong>Email</strong></label></td>
                    <td><input name="Email" type="email" autocomplete="on" required
                            class="auto-style1"/></td>
                </tr>
                <tr>
                    <td><label for="pswd"><strong>Password</strong></label></td>
                    <td><input  name="pswd" type="password" autocomplete="on" required
                            class="auto-style1" /></td>
                </tr>
            </table>
           <br />
            <input id="SignUpBtn" type="submit"  value="Sign Up" />
            <br />
            <a href="SignIn.aspx">Already Registered? Sign in</a>
      </div>
    </form>
</body>
</html>
```

**SignIn.aspx :**

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="SignIn.aspx.cs"
Inherits="SignUp_Page.SignIn" %>
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml">
   <head runat="server">
      <title>SignIn Page</title>
      <style type="text/css">
         .auto-style1 {
         width: 200px;
         }
         #SignUpBtn{
         margin-left: 218px;
         }
         #form2{
             background-color:lightsteelblue;
         }
      </style>
   </head>
   <body>

      <form id="form2"  runat="server" method="post">
          <div  style="height: 210px; margin-left: 41px">
            <h3>SignIn Page (Login)</h3>
            <!--html component inside asp-->
            <table style="width: 100%;">
               <tr>
                  <td><label for="Name"><strong>User Name</strong></label></td>
                  <td><input  name="Name" type="text" autocomplete="on" required
                            class="auto-style1"/></td>
               </tr>
               <tr>
                  <td><label for="pswd"><strong>Password</strong></label></td>
                  <td><input  name="pswd" type="password" autocomplete="on" required
                            class="auto-style1" /></td>
               </tr>
            </table>
            <br />
            <input id="SignUpBtn" type="submit"  value="Sign In" />
            <br />
            <a href="SignUp.aspx">Not Registered? Sign Up here</a>
         </div>
      </form>
   </body>
</html>
```

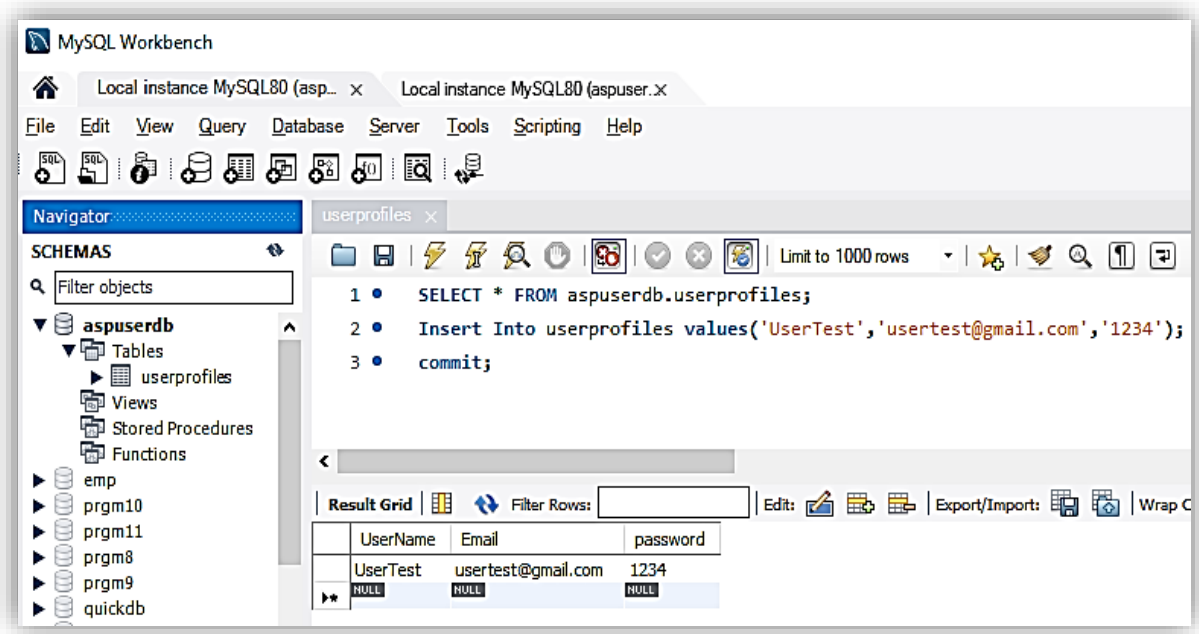
**SignUp.aspx .cs:**

```
using System;
using MySql.Data.MySqlClient; //Download it from NuGet Package Manager
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

namespace SignUp_Page
{
    public partial class WebForm1 : System.Web.UI.Page
    {
        protected void Page_Load(object sender, EventArgs e)
        {
            MySqlTransaction trans;
            var con = new MySqlConnection("server=localhost;user
                                id=root;password=root;database=aspuserdb");
            con.Open();

            if (IsPostBack) //if sign Up form submitted
            {
                var Name = Request.Form["Name"];
                var Email = Request.Form["Email"];
                var password = Request.Form["pswd"];

                var cmd = new MySqlCommand("Select UserName from userprofiles where
                                                    UserName=\""+Name+"\"",con);
                MySqlDataReader rdr = cmd.ExecuteReader();

                if (!rdr.Read()) //if Name not exists on DB
                {
                    rdr.Close();
                    trans=con.BeginTransaction();
                    var sql = new MySqlCommand("Insert Into userprofiles
                           values(\'"+Name+"\',\'"+Email+"\',\'"+password+"\')", con);
                    sql.ExecuteNonQuery();
                    trans.Commit();
                    Response.Write("<script>alert('Successfully Registered\\n
                                                    Signing Up.....');</script>");
                }
                else
                    Response.Write("<script>alert('UserName Already exists\\n
                                                Try with other User Name');</script>");
            }
            con.Close();
        }
    }
}
```

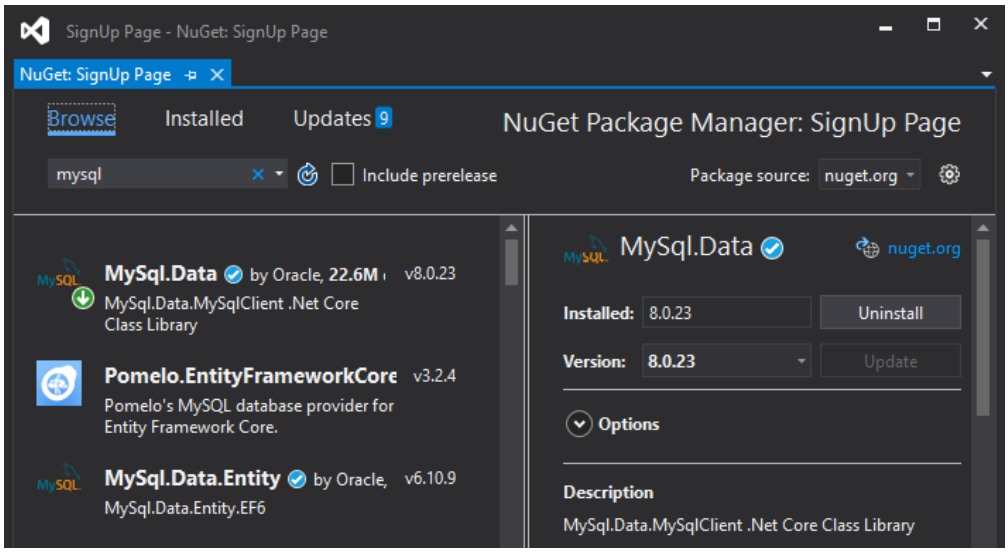
**SignIn.aspx.cs :**

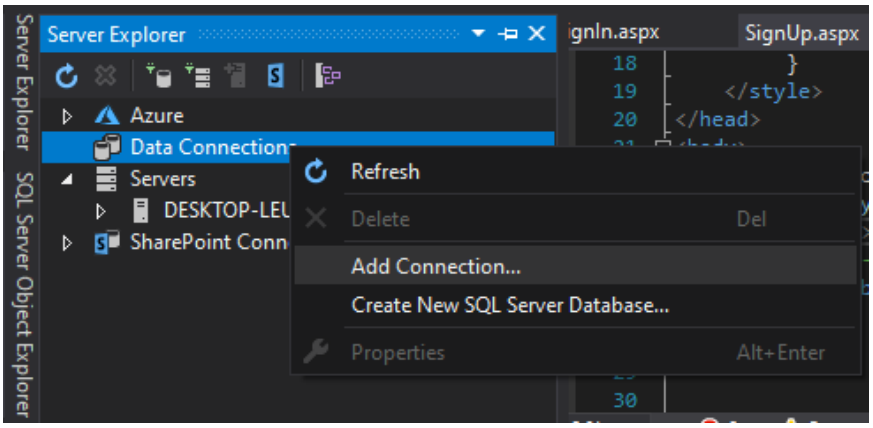
```
using System;
using MySql.Data.MySqlClient;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

namespace SignUp_Page
{
    public partial class SignIn : System.Web.UI.Page
    {
        protected void Page_Load(object sender, EventArgs e)
        {
            var con = new MySqlConnection("server=localhost;user
                        id=root;password=root;database=aspuserdb");
            con.Open();

            if (IsPostBack) //if sign Up form submitted
            {
                var Name = Request.Form["Name"];
                var password = Request.Form["pswd"];

                var cmd = new MySqlCommand("Select * from userprofiles where
                     UserName=\'" + Name + "\' AND password=\'" + password + "\'", con);
                MySqlDataReader rdr = cmd.ExecuteReader();

                if (rdr.Read()) //if Name and pswd match with any rows of DB
                {
                    form2.Attributes.CssStyle.Add("display", "none");// Hiding form2
                    Response.Write("<script>alert('Signing in.....');</script>");
                    Response.Write("<h2> Welcome  "+Name+"<h2>");
                    con.Close();
                }
                else
                    Response.Write("<script>alert('Invalid UserName or Password\\n\\n
                                            Not Registered yet?');</script>");
            }
        }
    }
}
```

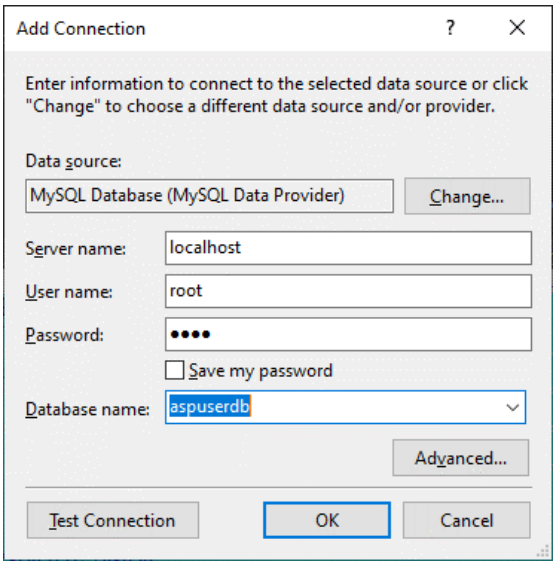
**Database Creation:**

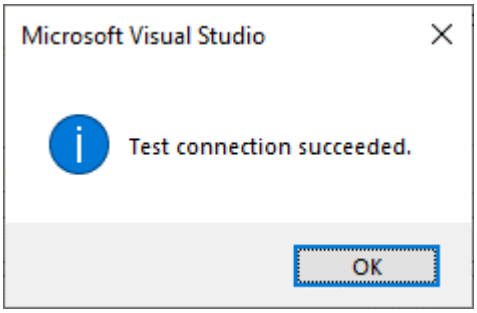


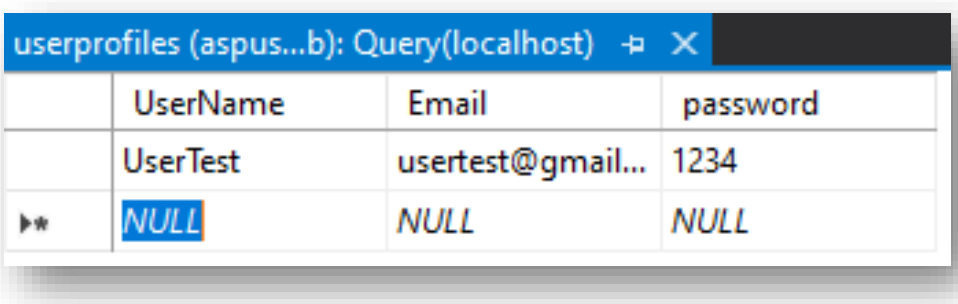
## Database Connection:



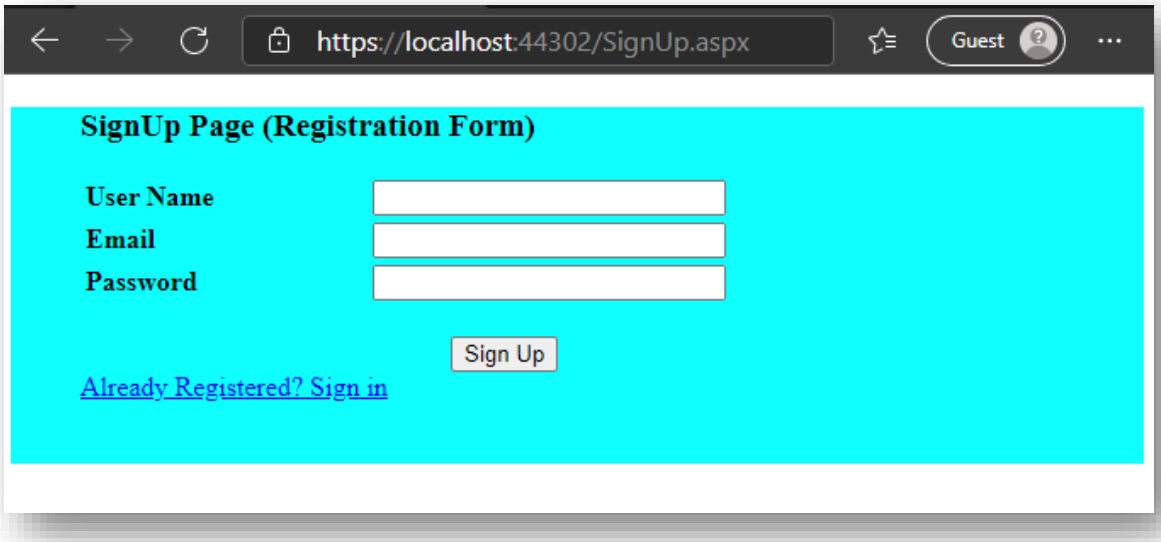



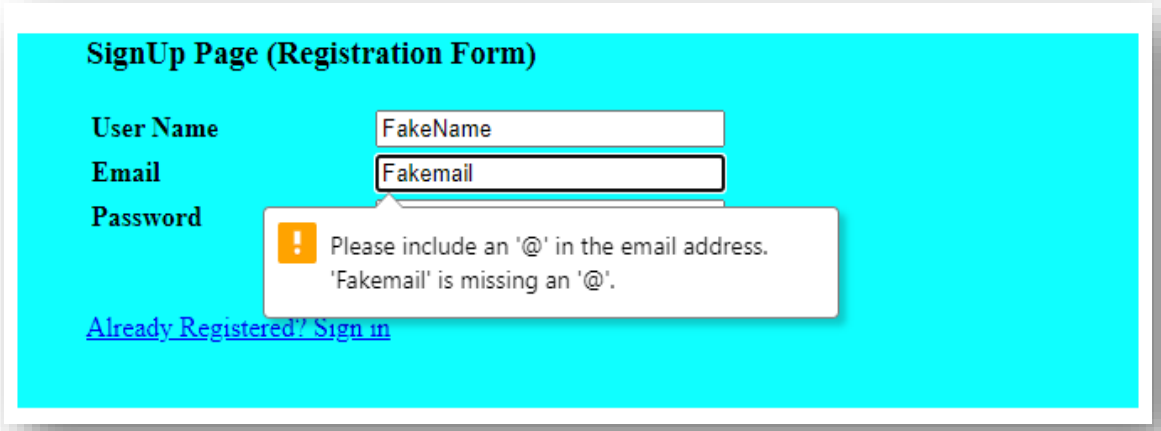



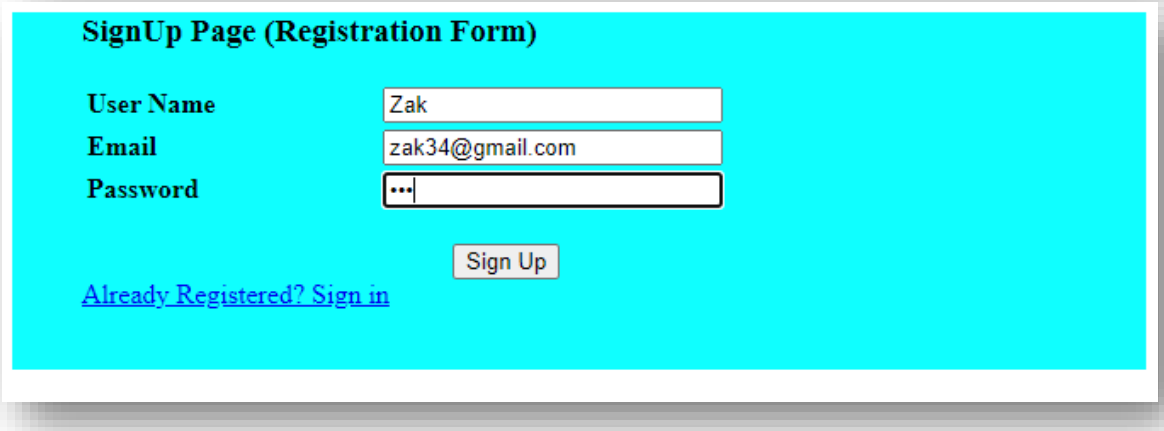



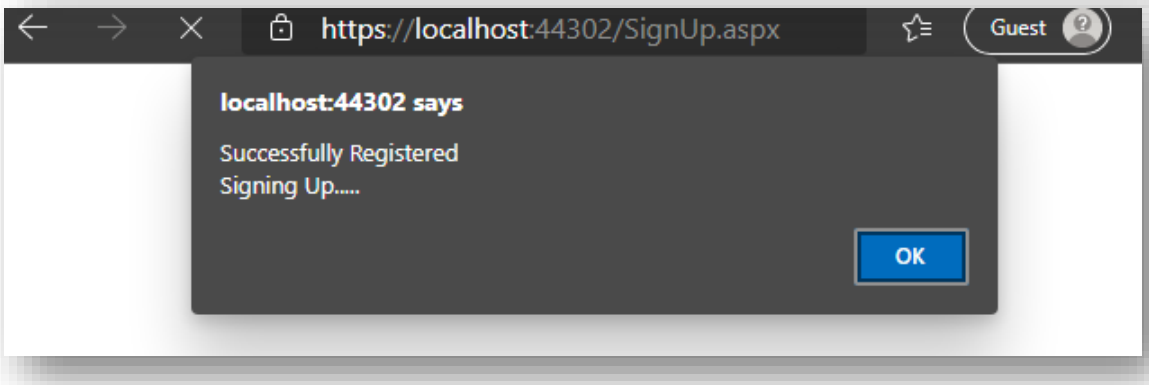



**Output :**

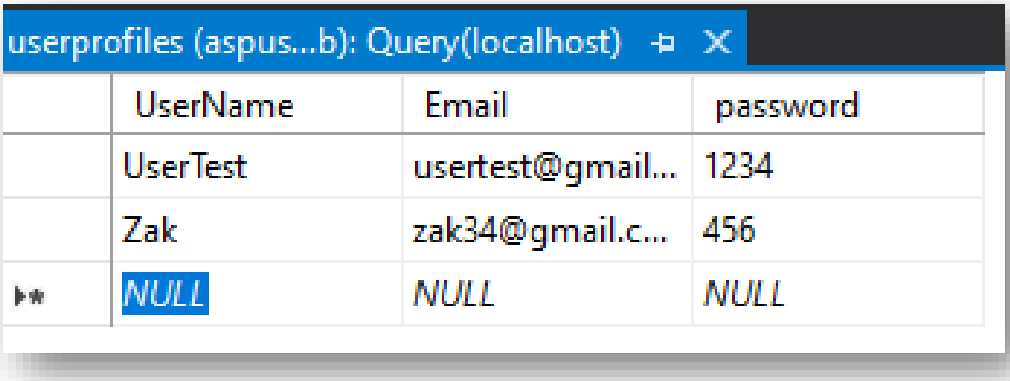

https://localhost:44302/SignUp.aspx
Guest
SignUp Page (Registration Form)
User Name
Email
Password
Sign Up
Already Registered? Sign in

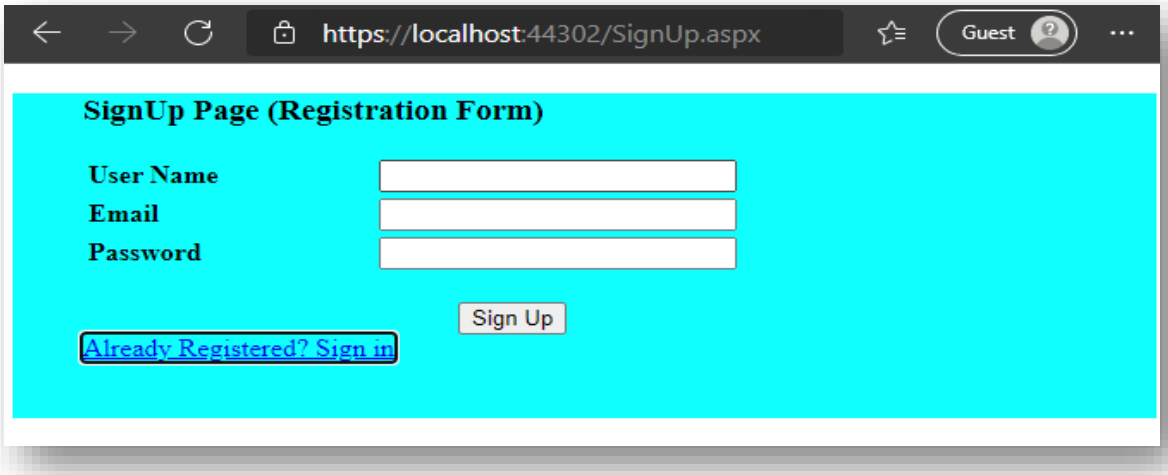

SignUp Page (Registration Form)
User Name
FakeName
Email
Fakemail
Password
Please include an '@' in the email address.
'Fakemail' is missing an '@'.
Already Registered? Sign in

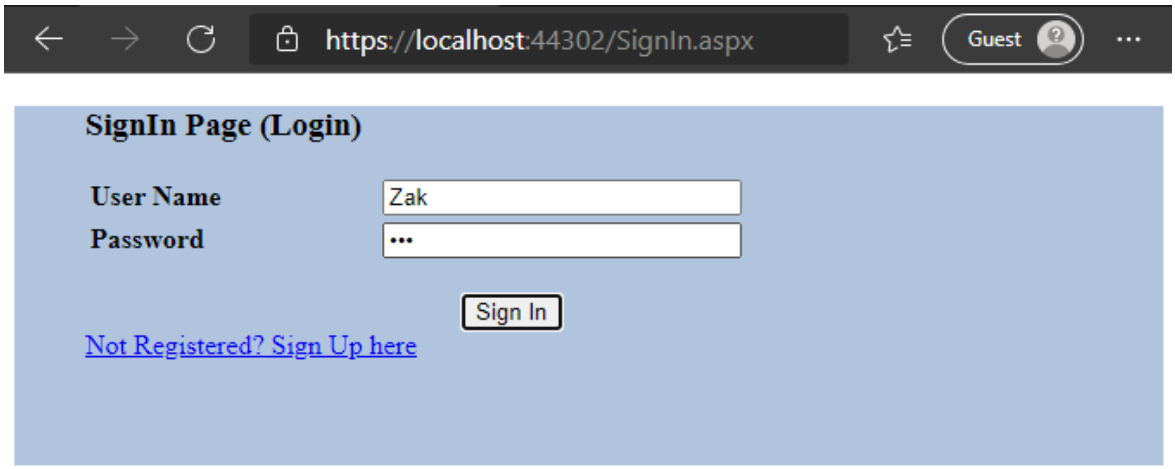

SignUp Page (Registration Form)
User Name
Zak
Email
zak34@gmail.com
Password
Sign Up
Already Registered? Sign in

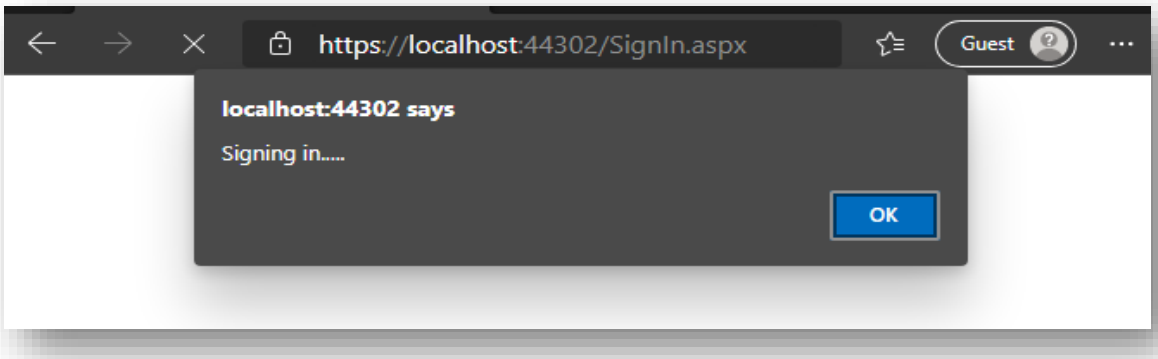

https://localhost:44302/SignUp.aspx
Guest
localhost:44302 says
Successfully Registered
Signing Up.....
OK

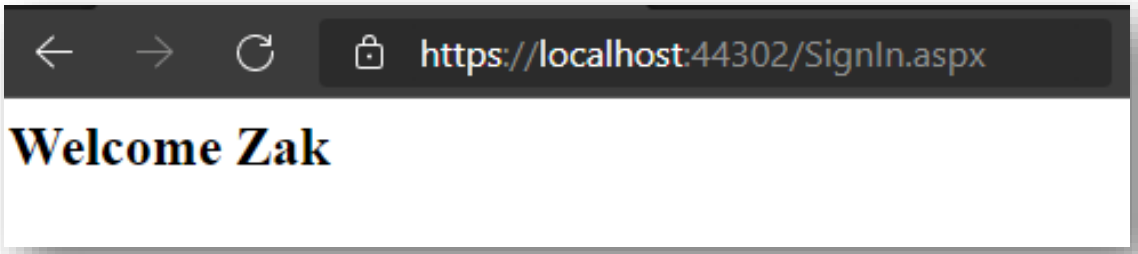
**Database After SignUp:**

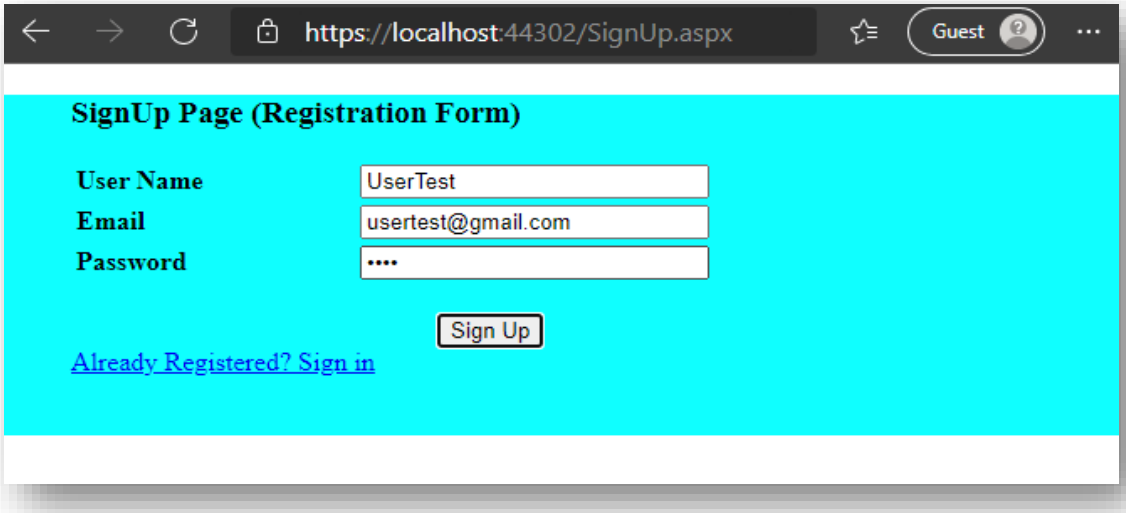


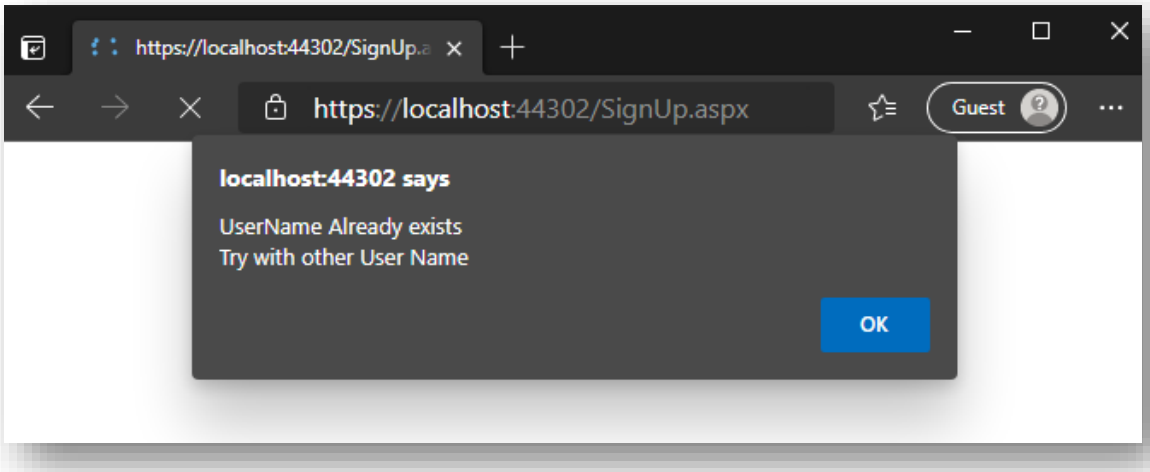



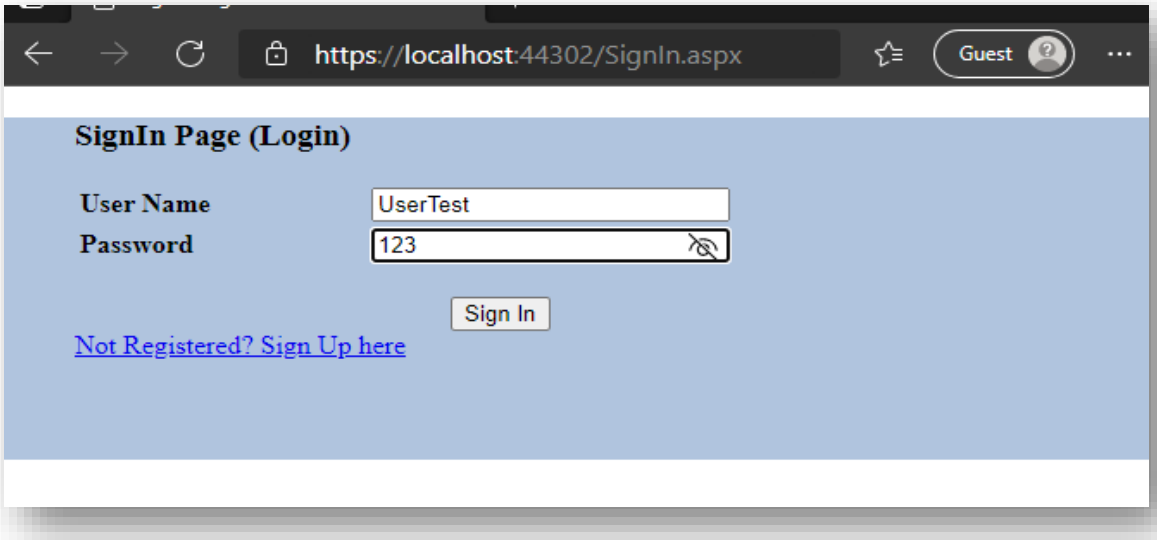



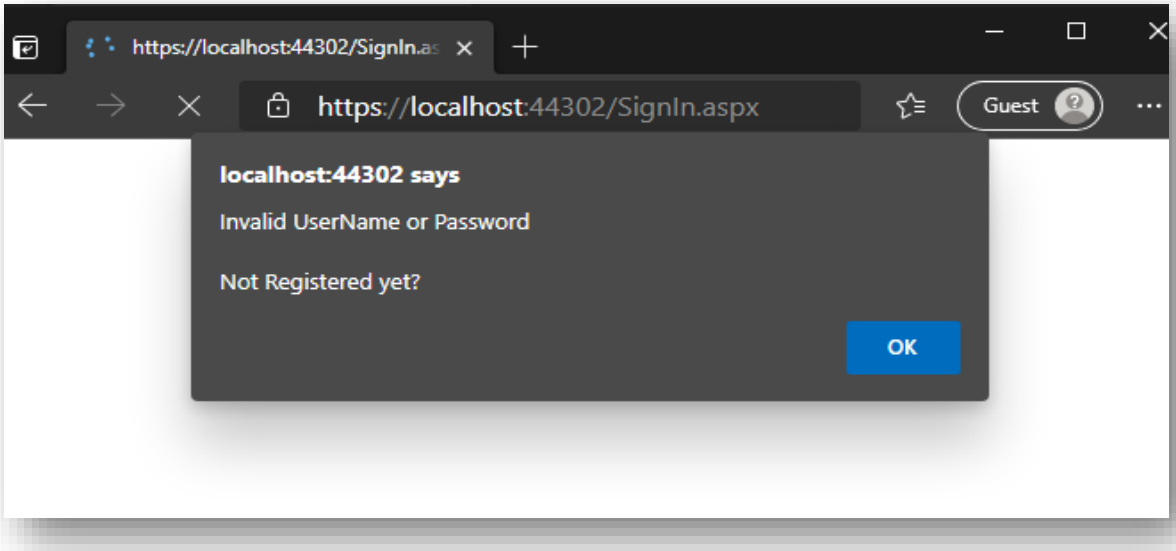




https://localhost:44302/SignIn.aspx
Welcome Zak


https://localhost:44302/SignUp.aspx
Guest
SignUp Page (Registration Form)
User Name
UserTest
Email
usertest@gmail.com
Password
Sign Up
Already Registered? Sign in

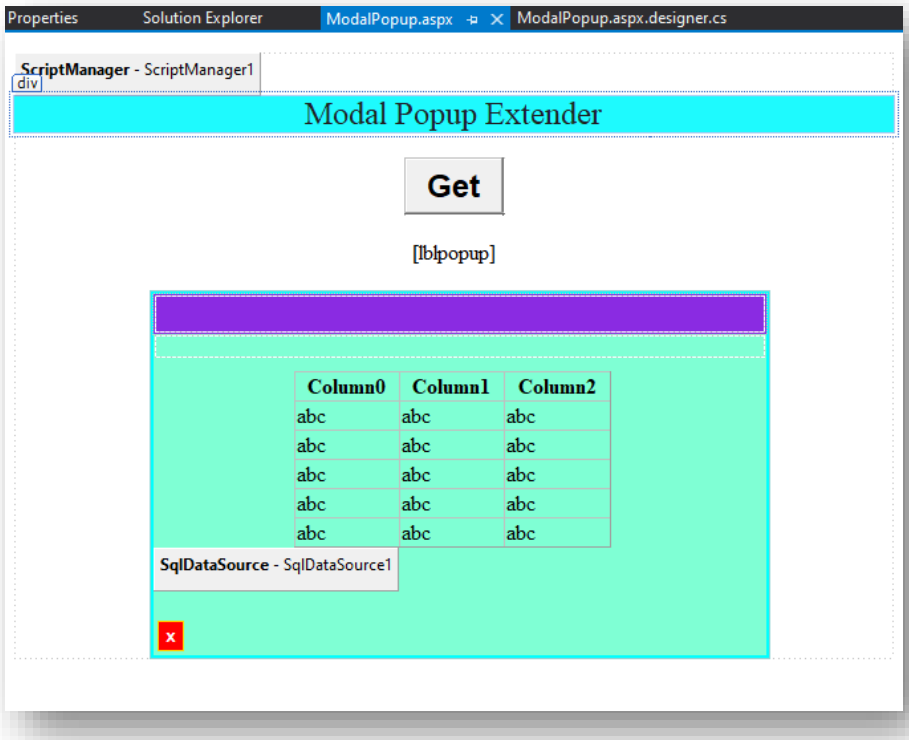

https://localhost:44302/SignUp.a
https://localhost:44302/SignUp.aspx
Guest
localhost:44302 says
UserName Already exists
Try with other User Name
OK


https://localhost:44302/SignIn.aspx
Guest
SignIn Page (Login)
User Name
UserTest
Password
123
Sign In
Not Registered? Sign Up here


https://localhost:44302/SignIn.as
https://localhost:44302/SignIn.aspx
Guest
localhost:44302 says
Invalid UserName or Password
Not Registered yet?
OK

## 30. Create a modal popup extender using C# ASP.NET.

**Design Window [ModalPopup.aspx] :**




**ModalPopup.aspx [code] :**

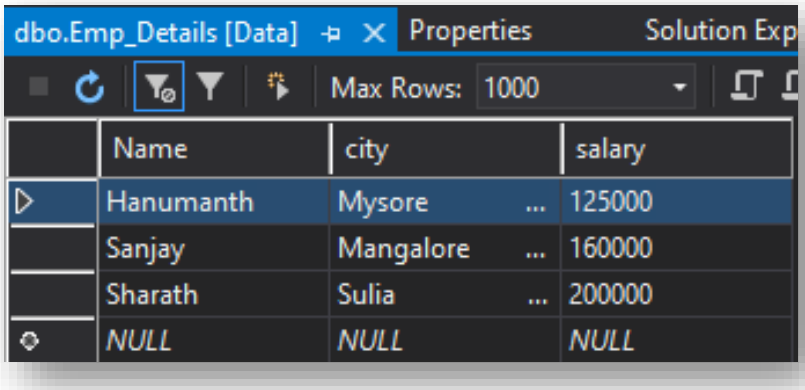
```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="ModalPopup.aspx.cs"
Inherits="ModalPopup_Form.ModalPopup" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title></title>
</head>
<body>

   <style type="text/css">

        .modalPopup
        {
            background-color:aquamarine;
            border:3px solid aqua;
            margin-left: 102px;
        }
        .modalPopup .header
        {
            background-color:blueviolet;
            height:30px;
            color:white;
            line-height:30px;
            text-align:center;
            font-weight:bold;
        }
```

```
        .modalPopup .footer
        {
            padding:3px;
        }
        .modalPopup .button
        {
            height:23px;
            color:white;
            line-height:23px;
            text-align:center;
            font-weight:bold;
            cursor:pointer;
            background-color:red;
            border:1px solid #ffd800;
        }
    </style>


    <form id="form1" runat="server">
        <asp:ScriptManager ID="ScriptManager1" runat="server"></asp:ScriptManager>

        <div style="background-color:aqua; font-size:x-large; text-align:center;">
            Modal Popup Extender
        </div>
        <p style="text-align: center">
            <asp:Button ID="Button1" runat="server" Text="Get" Font-Bold="True" Font-
             Size="X-Large" OnClick="Button1_Click" Width="75px"/>

        <p style="text-align:center;">
            <asp:Label ID="lblpopup" runat="server"></asp:Label>
        </p>

        <ajaxToolkit:ModalPopupExtender ID="mpe" PopupControlID="Panel1"
             TargetControlID="lblpopup" PopupDragHandleControlID="headerdiv"
             CancelControlID="btnclose" runat="server"
             DropShadow="True"></ajaxToolkit:ModalPopupExtender>

        <asp:Panel ID="Panel1" runat="server" CssClass="modalPopup" Font-Underline="False"
                                                                    Width="462px">
            <div id="headerdiv" class="header"></div>
            <div id="divdetails" ></div>

            <asp:GridView ID="GridView1" runat="server" style="margin-left: 106px;
             margin-top: 9px" Width="239px"> </asp:GridView>

            <asp:SqlDataSource ID="SqlDataSource1" runat="server"></asp:SqlDataSource>

            <div id="footerdiv" class="footer">
                <br />
                <asp:Button ID="btnclose" Class="button" runat="server" Text="x"/>

            </div>
        </asp:Panel>
    </form>
    <p>
 </p>
</body>
</html>
```

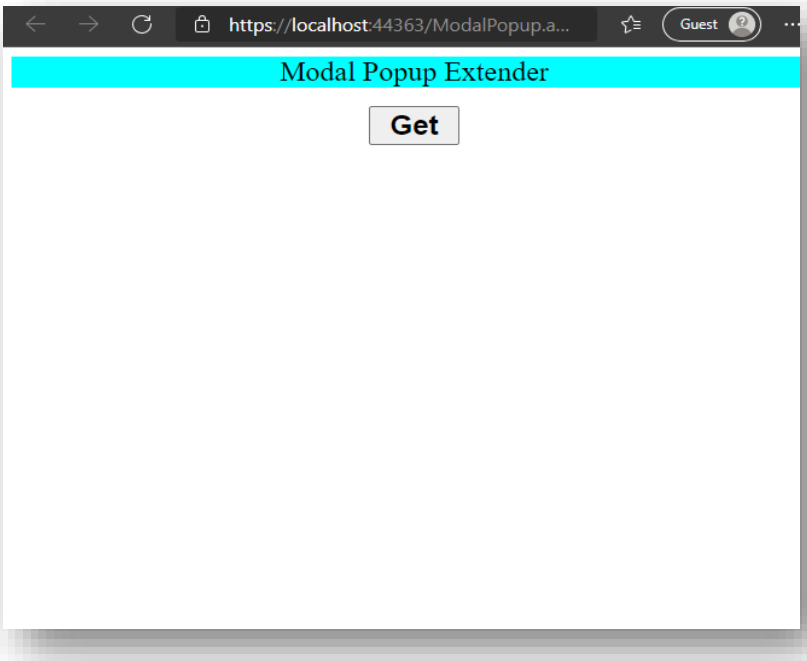
**ModalPopup.aspx.cs :**

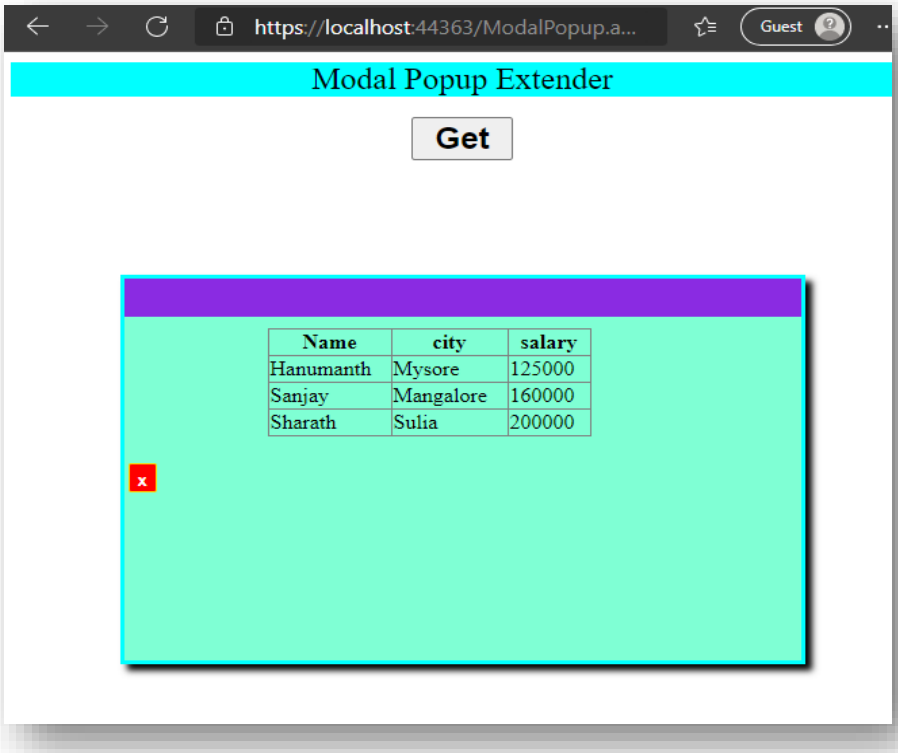
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Data.SqlClient;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;

namespace ModalPopup_Form
{
    public partial class ModalPopup : System.Web.UI.Page
    {
        protected void Button1_Click(object sender, EventArgs e)
        {
            SqlConnection con = new SqlConnection("
            Data Source=(LocalDB)\\MSSQLLocalDB;AttachDbFilename=C:\\Users\\Sanjay-
            PC\\source\\repos\\Sanjay_C#_Lab\\ModalPopup_Form\\ModalPopup_Form\\App_Data\\Em
            ployee.mdf; Integrated Security=True");
            con.Open();
            SqlCommand cmd = new SqlCommand("select * from dbo.Emp_Details", con);
            SqlDataReader rdr = cmd.ExecuteReader();
            GridView1.DataSource = rdr;
            GridView1.DataBind();
            mpe.Show();
            con.Close();
        }
    }
}
```

**Database :**



**Output :**


https://localhost:44363/ModalPopup.a...
Guest
Modal Popup Extender
Get


https://localhost:44363/ModalPopup.a...
Guest
Modal Popup Extender
Get
Name
city
salary
Hanumanth
Mysore
125000
Sanjay
Mangalore
160000
Sharath
Sulia
200000
x